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A
COMPENDIUM
OF THE THEORY AND PRACTICE
OF
MIDWIFERY:
CONTAINING
PRACTICAL INSTRUCTIONS FOR THE MANAGEMENT OF
WOMEN
DURING PREGNANCY, IN LABOUR, AND IN CHILD-BED;
CALCULATED
To correct the Errors, and to improve the Practice, of
MIDWIVES;
AS WELL AS TO SERVE AS AN INTRODUCTION
TO THE
STUDY OF THIS ART.

THIRD EDITION ENLARGED.

By SAMUEL BARD, M. D.

President of the College of Physicians and Surgeons in the University of
the State of New-York.

NEW-YORK:

PRINTED AND SOLD BY COLLINS AND CO,
NO. 189, PEARL-STREET.

1815.

DISTRICT OF NEW-YORK, ss.

BE IT REMEMBERED, That on the fourth day of September, in the fortieth year of the independence of the United States of America, COLLINS & Co. of the said district, have deposited in this office the title of a book, the right whereof they claim as proprietors, in the words and figures following, to wit:

“ A Compendium of the Theory and Practice of Midwifery : containing Practical Instructions for the Management of Women during Pregnancy, in Labour, and in Child-bed ; calculated to correct the Errors, and improve the Practice of Midwives ; as well as to serve as an Introduction to the Study of this Art. Third Edition enlarged. By Samuel Bard, M. D. President of the College of Physicians and Surgeons in the University of the State of New-York.”

In conformity to the act of the Congress of the United States, entitled “ An act for the encouragement of learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies, during the time therein mentioned,” and also to an act, entitled “ An act, supplementary to an act, entitled an act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints.”

THERON RUDD,
Clerk of the Southern District of New-York.

INTRODUCTION.



HAVING frequently in the course of my practice, and particularly since my residence in the country, had occasion to observe how much our midwives, and too many practitioners, who take on themselves the care of women in labour, stand in need of instruction; and how incapable most of such are, from deficiency of education, as well as from pecuniary considerations to derive it from books of science and systems of midwifery, I have thought, that a concise, cheap book, containing plain but correct rules for their practice in natural labours, and for the relief of such complaints as frequently accompany pregnancy and labour, or which follow delivery, would in the present state of this country, prove a useful work. This I have attempted in the following essay; in which it has been my object to be useful, rather than to appear learned; to say nothing but what is absolutely necessary, and easily understood; and to detail such facts and observations, and recommend such practices, as have been long known, and have re-

ceived the stamp of time and experience, rather than to offer new opinions.

In a work of this nature, all claim to originality must necessarily be relinquished ; and so far from aiming at it, I confess I have not hesitated occasionally to use the language of others, where I have found it sufficiently clear and familiar for my purpose : and I hope this acknowledgment, will be received in place of frequent reference and marks of quotation.

Thus to instruct the ignorant, in what it is confessed the learned are already sufficiently informed, appears an humble attempt ; still it is one, I have not found on the present subject, altogether free from difficulty. I have endeavoured to arrange the work in such order, and to clothe my opinions in such language as will be intelligible and instructive to the most ignorant. I have used as few technical terms as was consistent with perspicuity and decency, and such as I have thought myself compelled to introduce I have occasionally explained.

Another difficulty has occurred, from the desire to be full and explicit, and yet not to say too much : convinced that the use of instruments, and the introduction of the hand into the womb, as too frequently practised by unskilful and presumptuous men, is more dangerous than the most desperate case of midwifery left to nature ; it was my wish to avoid as much as possible even mentioning these operations ; and to confine myself to teaching the

great resources of nature, and delivering such rules and precepts, as would in the first place prevent all unnecessary interference with her efforts; and when they fail, as they sometimes will fail, to give such assistance only, as would enable her to accomplish the delivery, without taking it out of her hands. Still I found it necessary in the former editions of this work, to describe the treatment of most tedious and lingering labours, and of many preternatural cases; and now in this third edition, with the hope of extending the usefulness of my book, and rendering it in all respects, an *introduction to the study and practice of midwifery*, I have concluded to add to the fourth chapter, on lingering and tedious labours, a section on the use of instruments. Still however, with the same intention, rather to recommend caution and repress temerity, than to encourage confidence and presumption; I have confined myself to delivering such general rules, principles and cautions, as will teach a young practitioner how he may commence the use of instruments, with some probability of improvement to himself, and safety and advantage to his patient, in the more simple and ordinary cases: rather than to point out the manner in which a matured judgment may direct a skilful and experienced hand in such as are more perplexed and difficult. This I am convinced is not to be taught in words, it can only be acquired by experience; and if attempted too early, will as certainly mislead a young practitioner, and

retard his improvement, as it will enhance his patient's danger. In this way I have endeavoured to avoid a danger, to which I confess I think the young and inexperienced are exposed, in reading such works as those of Mr. Baudelocque, and most systematic writers; unless, at the same time, that they study their principles, they hear their explanation from a professor, and see their application in actual practice. The precise and particular description these authors give of intricate and perplexed cases; and their positive rules for their relief by the use of instruments, may, and I am convinced do, often lead the student into an opinion of their easy application, and safe and certain use; in which, when he comes to put them in practice, he will find himself miserably deceived. He will probably fail at first, for want of judgment to discriminate accurately between one case and another; as well as for want of skill and dexterity in the application of his instruments: and finding himself foiled in the use of the safer lever and forceps, he will become alarmed, confused, and apprehensive for his patient's safety, as well as for his own reputation. And now, deeming a speedy delivery essential to both; and that having taken the case into his own hands, and began his work, he thinks he must not desist before he has accomplished it. He flies to the crotchet, as more easy in its application, and more certain in its effect—with this, he probably succeeds; and although the poor infant is

sacrificed, yet he persuades himself, perhaps honestly believes, this was necessary : his patient relieved from great pain, and the apprehension of immediate death, and her friends rejoicing in her safety, consider the loss of the child a trifle ; and unhappily he too learns to think so, his heart becomes hardened, he perseveres in this murdering system on every occasion of a little difficulty, and builds his reputation on the very means which should have destroyed it. In this way only, can I account for the more general use of the crotchet, than of the lever or forceps, in the hands of too many practitioners of our country. The practice is too general to be controverted ; and if I can contribute in any degree to lessen so great an evil, I shall have succeeded in my principal intention in composing this essay ; and believe it not the least important of my professional labours.

The learned reader will, I am apprehensive, accuse me of a tedious tautology in many places ; and I plead guilty to the charge : but as it consists chiefly in a repetition of important and necessary cautions, intended to correct inveterate errors, and more strongly to impress a better practice ; no man acquainted with the ordinary practice of midwifery in this country, will, I am persuaded, think this the least useful part of the work. To such as wish for fuller information on this branch of their profession, than they will find in this Compendium, I recommend the writings of Mr. White, of Manchester,

Dr. Richard Bland, Dr. Denman, Mr. John Burns, of Glasgow, and Baudelocque : but particularly those of Mr. White and Dr. Denman. I take pleasure in acknowledging my obligations to these two most excellent writers ; to the study of whose valuable works, I have been indebted for much improvement in my former practice, as well as for many useful lessons which I have attempted to detail in this performance. By the writings of Bland and Burns, he will be confirmed in the most useful cautions and sound practice, he will learn from White and Denman ; and in Baudelocque he will find a writer of extensive experience, great acuteness and humanity, and one who has profited by all the learning of his day ; but at the same time, one pretty much wedded to his own opinions, and who abounds in many nice and minute distinctions, not easy to be understood, but by a reader of considerable knowledge and experience : and on these is founded a variety of modes of relief, and frequent interpositions of art, which on many occasions may be dispensed with, and which may lead a young student and inexperienced practitioner into error. It may appear singular that in this enumeration of authors, I have not mentioned Smellie, whose works are in the hands of almost every practitioner in this country ; and more generally read than any other. But, although one of the first and greatest improvers of the art of midwifery of the last century, Smellie certainly was not acquainted with all the

resources of nature in their full extent. Having greatly improved the instruments of his day, he has described their use with great precision; and I own I am apprehensive, that many of his readers may thereby be induced to suppose them equally safe in their hands, as they appear to have been in his; and hence be led to a more frequent use of them, than modern practice has found necessary or safe.

I confess, not without severe regret, that towards the end of thirty years practice, I found much less occasion for the use of instruments, than I did in the beginning; and I believe we may certainly conclude, that the person, who in proportion to the extent of his practice, meets with most frequent occasion for the use of instruments, knows least of the powers of nature; and that he who boasts of his skill and success in their application, is a very dangerous man.

Let therefore, the young practioner of midwifery study first the symptoms and progress of natural labour, as he will find them described in White, Bland, and Denman, and in this Compendium; and above all, as he will see them at the bed-side of his patients, when left to their own uninterrupted efforts: whence he will learn the powers and resources of nature; and when he is fully acquainted with these, and not before, he will be enabled to form a just opinion when he ought to interfere, and have recourse to art. And let every practitioner, when he supposes himself called upon to put in practice any remedy, by which the lives of the

mother and child are endangered, or that of an infant necessarily sacrificed, reflect, that in all such cases, we reason only from strong probabilities ; that the resources of nature are almost infinite ; and that the event frequently disappoints our expectations. No man, therefore, who has been fatigued by several days and nights watchful attendance, whose sympathy for the sufferings of his patient has been greatly excited, and whose fears for her safety are increased by the fears and distress of her friends ; can be sure he commands that cool and dispassionate judgment, which alone ought to determine so intricate a question, in which the lives of two human beings are involved. It is his duty, therefore, on all such occasions, to call for the aid of some other, in whose experience and judgment he has confidence ; whose mind is free from the embarrassments under which his own labours ; and who, at all events, will share his responsibility and lessen his regrets.



A COMPENDIUM
OF THE THEORY AND PRACTICE OF
MIDWIFERY.

CHAPTER I.

OF THE FEMALE PELVIS AND ITS CONTENTS.

SECTION I.

Of the Bones and their Connexions.

1. OF the skeleton of the adult, the knowledge of the bones of the pelvis or basin, is all that is necessary to the practice of midwifery; but of these the more accurate his knowledge, the better will the accoucheur understand the causes of most of the difficulties which occur in tedious and dangerous labours; and will thereby be taught to avoid many errors in practice. He will do well, therefore, not only to study their form and connexions from plates and descriptions; but whenever he has an opportunity, to correct and improve his knowledge, by carefully examining them on the skeleton. But, although it is impossible for a student of midwifery, who wishes to attain any excellence in this art, to be too minute in his inquiries into every particular of the shape, dimensions, and structure of the female pelvis; yet, as the object I principally have in view,

is to improve the practice, and correct the errors of midwives, and those male practitioners, who, without the advantages of a regular education, are already engaged in the practice of midwifery; I shall confine my observations to the most essential points, and shall dwell very particularly on those; being convinced, that in this way, I shall accomplish my intentions in a greater degree, than by burthening the memory, and probably confusing the ideas of my reader, by a great variety of particulars.

PLATE I.

Female Pelvis.

A, the last vertebra of the loins—B B B, the sacrum—C C, the pubes—D D, the thigh bones and their sockets—E E, the ilia—F F F F F, the brim of the pelvis—G, the coccyx—C 1, the arch of the pubes.

2. The pelvis or basin which is here represented, is that large irregular circle of bone, which supports the body, by its attachment to the back bone at the bottom of the loins; and by the sockets which it affords to the heads of the thigh bones: and which contains and defends within its cavity, the bladder of urine, the rectum or straight gut, and between them the womb.

3. It is formed behind by the os sacrum or rump-bone, B B B: on the sides by the ossa ilia, or hip-bones, E E: in front by the ossa pubis or share bones, C C: and below by the ischia, or the bones on which we sit, H H: with a part of the sacrum, and its appendage the coccyx, G, which in brutes ends in the tail. A marks the last vertebra of the loins, and C 1 the arch of the pubes; and above, its juncture, called the symphysis pubis.

4. All the bones of the pelvis are connected by rough surfaces, and an intervening cartilage; this is most conspicuous in infancy, and more or less obliterated by age. That which connects the ilium, E, ischium, H, and pubes, C, is soonest obliterated, and before puberty can only be discovered by a rough line crossing the sockets of the thigh bones; so that in the adult these three bones form but one; and are commonly so described under the denomination of os innominatum; but with a view to the practice of midwifery, it is most convenient to consider them as three distinct bones.

5. The cartilaginous connexion between the os sacrum and ilium, is seldom quite obliterated until in advanced old age; and in young women during labour it sometimes yields so much, as to form an

imperfect joint, which very much weakens that part, and now and then impairs the manner of walking through life.

6. The connexion in front between the bones of the pubes is still looser, and approaches more nearly to the structure of a joint; the anterior extremity of each bone is covered by a cartilage, and connected and bound together by very strong fibres, of a nature between cartilage and ligament; passing in every direction from one to the other, and interspersed with small reddish substances, supposed to be synovial glands. This substance is of the shape of a wedge, thicker before than behind, and forms between the bones of the pubes a species of articulation, seldom or never quite obliterated even in advanced life. Consequently, whether from a natural relaxation and disposition in these junctures to separate during labour, or from the effects of disease, it is most frequently here that such a separation is observed to take place; which, according to the degree of it, or the sudden violence with which it is produced, is followed by inflammation and abscess, excruciating pain, tedious and incurable lameness, and on some occasions even by death.

7. It was formerly supposed, that these symphyses or junctures between the bones of the pelvis, always yielded somewhat during labour; and that in severe labours from contracted pelves they yielded so much as considerably to facilitate delivery. This sentiment led at first to the practice of attempting to promote the relaxation of these parts by baths, poultices, fomentations, and liniments; and afterwards to the proposal of an operation to divide the symphysis pubis. But after the most attentive consideration of this subject, by examining the bones on the skeleton, and performing the operation on the dead body, it has been proved, that by the most complete division

of the pubes, no enlargement of the pelvis can be obtained, which will compensate for the danger attending, or the ill consequences which must necessarily follow this cruel operation. The same arguments prove, that all other attempts to soften and relax these junctures must be absolutely useless.

8. The articulation between the sacrum and the spine is formed like those between the vertebræ of the back-bone, by an intervening cartilage; very thick before and very thin behind, by which shape the angle at A, plate 3, between the sacrum and last vertebra of the loins is formed.

9. The coccyx G consists of three or four articulations, diminishing from the top of the first to the extremity of the last; each piece is covered by cartilage, and united to the sacrum and to each other by strong ligaments, so as to allow of considerable motion backwards; most freely in youth, and diminishing insensibly, until by age it is obliterated; which, when it happens early, occasions some inconvenience in labour.

10. It is very manifest, by inspecting the plate, that when a person stands upright, the weight of the body, resting on the heads of the thigh bones, has a tendency to press those parts of the pelvis which form the sockets inwardly towards the sacrum; and consequently, that if at any time the bones should be rendered soft and yielding by disease, the cavity of the pelvis might be contracted and deformed. This actually takes place, sometimes in adults, more frequently in rickety children. Such children, therefore, should never be put on their feet and taught to walk, until by time and the use of the cold bath, they shall have got the better of the disease; but they should be suffered and encouraged to creep about, until they have acquired so much strength as to get on their legs of their own accord: this will

afford the best chance to preserve the natural shape of the pelvis, a matter of the first importance to girls, and on which, not only their beauty, ease, and comfort, but the safety of their lives, when they come to be mothers, may depend. It is of worse consequence to keep such children constantly sitting, than to make them walk; because, whilst the pressure is nearly the same, they are deprived of that exercise which would contribute to their cure. A crooked spine is generally, but not always, accompanied by a distorted pelvis. All deformed women, therefore, should well consider the great risk they run by engaging in marriage; that they probably may never bring a living child into the world, and that at every birth, their own lives must be exposed to the utmost hazard. The existence of a distorted pelvis may be determined by a proper examination before marriage; and where from any deformity in the spine, especially when accompanied by lameness, there is reason to suspect it, it would be very prudent in a woman to submit to such examination before she determines to purchase the title of mother, and the comforts of marriage at so dear a rate.

SECTION II.

Of the Openings and Dimensions of the Pelvis.

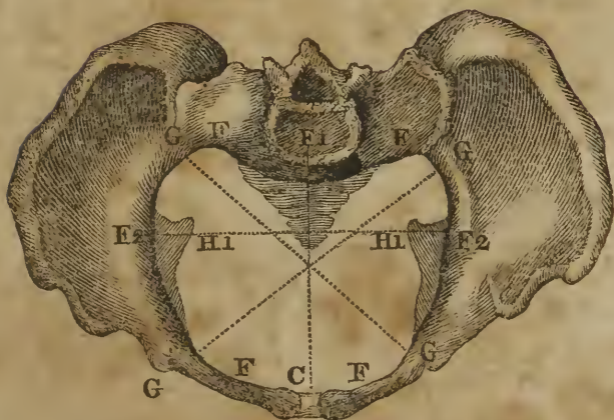
11. AFTER the fourth month of pregnancy, the womb rises out of the pelvis, and as it increases in size, rests on and is supported by an oval ridge formed by these bones, and projecting a little inwardly, called the *brim* of the pelvis, through which the child

must pass at its birth; and upon the form and dimensions of which, as far as the mother is concerned, the ease and difficulty of labour very much depend; it is therefore necessary that the midwife should form as accurate an idea as possible of the *brim* of the pelvis.

12. The *brim* of the pelvis which is marked in the plate by the letters F F F F F F is formed behind, by the upper part of the sacrum, F 1, and the lower part of the last vertebra of the loins, A, which join in such a manner as to form a considerable angle jutting forward: at the sides, by a prominent ridge on the inside of the ilia, F 2 F 2, and in front by the pubes, C C. The form is an irregular oval, narrower from behind to the forepart, from F 1 to C C, and wider from side to side, from F 2 to F 2, and in size so wonderfully adapted to that of the child's head and shoulders, that notwithstanding all the variety which occurs in the size of parents and their offspring, and all the irregularities of shape from accident or disease, not one woman in ten thousand dies undelivered, where nature is not disturbed in her operations. Whenever the child's head passes easily through this brim, we may expect a speedy delivery; because, although an irregularity in the shape and contraction of the lower opening of the pelvis (see plate 4) may obstruct the birth, yet that does not so frequently occur as a contraction of the brim; and whenever the lower opening is deformed, the brim can hardly escape.

PLATE II.

Superior opening, or brim of the Pelvis.



FFFFF, the brim of the pelvis.

F 1, C, direct and shortest diameter.

F 2, F 2, transverse or longest diameter in the skeleton.

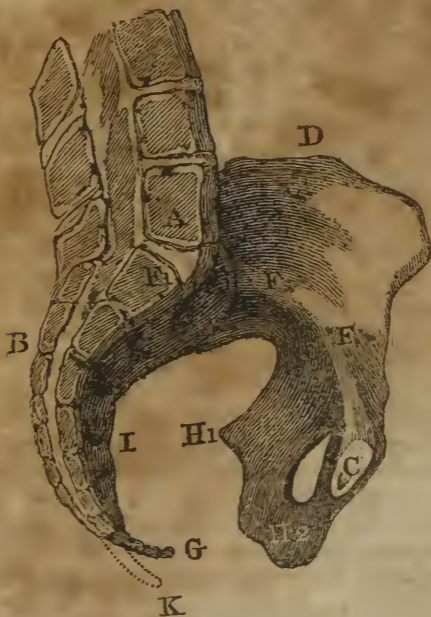
G G, diagonal or longest diameter in the living subject.

H 1 H 1, sharp processes of the ischia, which bending a little inward contract the inferior opening of the pelvis, in its transverse diameter.

13. This plate exhibits a view of the pelvis, so placed as to look more immediately through the *brim* from above; by which its shape and dimensions, together with the parts of each bone which form it, are more easily and distinctly seen. Its shape is nearly oval, longest from side to side from F 2 to F 2, and narrower from pubes to sacrum from F 1 to

C. Its dimensions are in a well-formed pelvis, from side to side from five to five and a quarter inches; and from pubes to sacrum from four to four and a quarter inches on the skeleton, when divested of the flesh and membranes, which in the living subject cover the bones, and lessen these dimensions about one inch; but with a lining which will yield considerably to pressure. This lining likewise, is not of equal thickness in all parts, but so much thicker at the sides, F 2 F 2, as to render that diameter of the brim, in the living subject, somewhat less than the diagonal from G to G.

PLATE III.

Lateral View of the Pelvis.

A, the last vertebra of the loins. F 1, the first vertebra of the sacrum. B, the sacrum. C, the pubes. D, the ilium. F F, the brim of the pelvis. G, the coccyx. H 1, sharp process of the ischium. H 2, blunt tuber of the ischium; from both the processes and tubers of the ischia, very strong ligaments pass to the edge of the sacrum, spreading wider as they approach the sacrum and completing in this part the sides of the inferior opening of the pelvis. I, hollow of the sacrum. K, coccyx when bent back.

14. This plate represents a lateral section of the pelvis, in which the body is supposed to be cleft perpendicularly through the back bone behind, and through the symphysis pubis (or joining of the share bones) before. It is designed in the first place, to show again the brim of the pelvis, F 1 F F C, and particularly to demonstrate how much the short diameter of the brim depends upon the distance between the projection of the sacrum (formed between the last vertebra of the loins, A, and the first of the sacrum, F 1) and the pubes, or share bone at C; the contraction of which space in ill-formed women, is one principal cause of all the difficulties which occur in tedious and dangerous labours. Secondly, it shows the depth of the pelvis behind, that is, from the brim at F, to the coccyx, G, about five and a half or six inches, when that bone is pushed as far back as it will commonly yield; expressed by the dotted lines ending at K. Thirdly, at the sides from the brim, F to H 1, the sharp process of the ischium. Lastly, it shows the depth of the pelvis before, where it is no more than that of the pubes, C, about one and a half, or at most two inches.

The knowledge of these circumstances will prevent the midwife from being deceived in forming an opinion, how far the child's head has advanced during labour; for although it may readily be felt under the pubes, we must not therefore conclude it has descended much, if at all, below the brim of the pelvis; unless by passing the finger back, we can at

the same time discover it filling the hollow of the sacrum, and beginning to rest on the coccyx and perinæum.

15. Lastly, this plate shows the hollow of the sacrum, I, which greatly enlarges the size of the pelvis below the brim, and facilitates delivery by allowing the child's head, as soon as it has passed the brim, to retire backwards, as it sinks down upon the coccyx.

16. The coccyx, G, consists of four small joints, which being moveable, it retires when pressed upon by the child's forehead, and increases the distance between this small bone and the pubes about one inch; by which the vertex (or that part of the child's head on which the hair diverges) and which is commonly the presenting part, is allowed more easily to slip from under the pubes.

17. In some subjects a little advanced in life, the coccyx is not only united as one bone to the sacrum, but the small bones of which it is composed, are likewise firmly united with each other, so that it makes some resistance, and increases the difficulty of the first birth. The contractions of the womb, however, will overcome this difficulty; and it has often been known to give way with a crack heard by the midwife and attendants. After this, in subsequent labours, the same difficulty seldom occurs.

PLATE IV.

Inferior Opening of the Pelvis.

C, pubes. E 1, sacrum. G, coccyx. H 2 H 2, blunt tubers of ischium. H 1 H 1, sharp processes of ischium. (See Plate III.)

18. This plate represents the lower opening of the pelvis, so placed as to look through it from below, in which the principal circumstance worthy of remark is, that the distance between the tubers or blunt processes of the ischia, on which we sit, H 2 H 2, as well as that between the sharp processes, H 1 H 1, is narrower than that from the coccyx, G, to the lower edge of the pubes, C. The lateral opening from tuber to tuber being from four to four and a quarter inches, whilst the transverse

opening from pubes to coccyx, when that small bone is pushed back as far as it will easily yield, is from five to five and a quarter inches. By this change between the diameters of the upper and lower openings of the pelvis, but particularly by the convergence of the two sharp processes of the ischia, H 1 H 1, the child's head, which enters the pelvis diagonally, with one ear towards the pubes and the other towards the sacrum; that is, with the shortest diameter of the head to the shortest diameter of the brim, is made to turn as it descends through the pelvis, until the vertex or hind head is brought under the pubes, and the face falls into the hollow of the sacrum, where it finds most room; and where the diameters of the head are again adapted to those of the lower opening of the pelvis, through which it has to pass. By these means too, the vertex or crown of the child's head, which is in all respects its smallest part, is brought to present to and first to pass the external orifice; which circumstance lessens as much as possible the necessary distention of the soft parts of the mother, and which in a great measure relieves the perinæum as soon as the vertex slips from under the pubes, and brings the nape of the child's neck against that bone. (See plate xvii. and plate xviii.) In the first, the child's head is represented entering the brim of the pelvis, with one ear to the pubes and the other to the sacrum; in the last, the ears are from side to side, the face in the hollow of the sacrum, and the vertex presenting to the external orifice.

19. In some narrow and deformed pelves, the two blunt processes, called the tubers of the ischia, H 2 H 2, as well as the two sharp points, H 1 H 1, plates iii. and iv., approach each other, so as to increase the difficulty which the bones of the mother oppose to the easy passage of the child's head. As soon as the

child's head has passed these, all danger from the labour is generally over. For although, in some labours, with a first child, and in women advanced in life before they bear children, the soft parts being of a firm and rigid texture, make considerable resistance to the birth; yet when that is left to nature from the beginning, and they are not fretted and inflamed by any officious interposition of the midwife, they soften and relax; sometimes in a few minutes, generally in a few hours, so as to permit the child to pass without injury: and as the woman is in no danger all this time, there can be no pretence for interference. Thus we see that upon the size, shape, and proportions, first of the brim or superior opening, and secondly, of the lower opening of the pelvis, almost all the difficulty in natural labour depends; and that when the child's head passes easily through these, we may expect a speedy delivery.

20. *Of the axis of the pelvis.* By the axis of the brim or superior opening of the pelvis, is meant a line drawn through the centre and perpendicular to the plane of that opening; this will pass very nearly in the direction of a line drawn from the connexion of the sacrum with the coccyx, to the umbilicus; so that the superior opening or brim, when the body is erect, is very much inclined from the horizon, and a line drawn from the third lumbar vertebra, will fall very nearly on the edge of the symphysis pubis, which, consequently, in a great measure supports the weight of the uterus in advanced pregnancy, whenever the woman is standing. This circumstance, whilst it occasions some uneasiness and pain in standing or walking, at the same time prevents a premature and very inconvenient descent of the pregnant womb into the pelvis. The axis of the inferior opening of the pelvis passes,

almost directly backwards from below the pubes to the hollow of the sacrum. It is of importance to attend to these circumstances whilst introducing the hand or any instrument into the vagina and womb.

PLATE V.

Bones of the Child's Head.

21. This plate shows the shape and proportions of the child's head, and the loose and imperfect manner in which the bones are formed and connected at birth; by which structure it is capable (if time be given) of being moulded into a proper shape, more easily to pass through the brim and lower opening of the pelvis; especially when they are not perfectly well formed. The imperfect edges of these bones and their membranous connexions, not only permit them to approach, but, when it is necessary, to overlap each other considerably; and, with little or no injury to the child, admit so great a change of shape, that the dimensions of the head are on some occasions completely changed; and the vertex or crown is pushed out into the form of a

sugar loaf. By this economy the difficulties occasioned by the large size of the head, and by all the lesser degrees of contraction and deformity of the pelvis, are so far diminished as to manifest that, but for this wise and benevolent formation, many children must have perished; or many women have died undelivered. The dimensions of the child's head, are naturally so much less than those of the openings of the pelvis, as to leave sufficient room for the fleshy coverings with which the pelvis is lined. The longest diameter of the head is from the forehead to the hind-head, from A to B, about four or four inches and a quarter; and the shortest from ear to ear, from C to D, about three or three and a quarter inches.

22. As has been observed, the child's head enters the brim of the pelvis diagonally, with one ear towards the pubes, and the other towards the sacrum; that is, with its shortest diameter opposed to the shortest diameter of the superior opening. At the same time the chin being placed on the breast, the vertex presents to the centre of the brim, and necessarily passes first: so that the longest diameter of the child's head, at the same time that it is opposed to the longest diameter of the brim, passes it so obliquely, as greatly to lessen the resistance it would otherwise meet with. It continues in this direction, until the basis of the skull passes the brim of the pelvis, but then immediately begins to turn where it finds least resistance, the pains forcing it down, whilst the sharp processes of the ischia (see plate III. H 1 H 1) pressing diagonally on the sides of the head, one towards the crown and the other towards the forehead, on the opposite side, compel it, as it descends, to turn with its longest diameter towards the longest diameter of the inferior opening of the pelvis; until the face fall into the

hollow of the sacrum; and the vertex or crown presents to the external orifice. Whilst the head of the child is making these turns, so as constantly to present its longest diameter to the longest diameter of the pelvis, the body of the child makes similar turns; so as to enter the pelvis with the shoulders diagonally from side to side: but as they descend, they are likewise by the same powers compelled to turn, by which means, when they arrive at the lower opening of the pelvis, one shoulder presents to the sacrum and the other to the pubes; and one passing through the external orifice a little before the other, lessens the necessary distention of the soft parts. Besides the bones of the head, many others which constitute one bone in the adult, are connected less firmly by cartilages and ligaments in the fœtus; and all the joints of the fœtus are much more flexible and moveable than they are in the adult, so as to yield considerably in passing through the pelvis, and render the birth more easy. The dark spots in the drawing represent the fontanells, where the unossified corners of the bones are connected by membranes. That nearest the forehead is nearly square, and is called the anterior or great fontanelle: that at the vertex, is called the posterior or lesser fontanelle; it is triangular, and during labour the bones being pressed together, is generally so nearly obliterated, that little more than the rough edges of the bones can be discovered. This, in a natural labour, is the presenting part, and whenever the anterior or great fontanelle can be felt in by ordinary examination early in the labour, we may predict a tedious labour, as the head does not then lie in the most favourable position.

The sutures which connect the different bones of the head, are likewise membranous in the fœtus. That which passes from the anterior to the poste-

rior fontanelle is called the sagittal suture; that which crosses this through the large fontanelle, the coronal suture; and that which descending from the posterior fontanelle separates the lambdoid from the parietal bones is called the lambdoidal suture.

PLATE VI.



23. This plate exhibits a child's head passing through a pelvis contracted about one fifth in the short diameter of the brim from sacrum to pubes; which, from the structure just now described, it is

enabled to pass by the force of the natural pains, when time is given. It is true, greater deformities than this occur, and once in many thousand cases, the pelvis has been found so distorted and contracted by disease, that a living child could not possibly pass through it. Of the degree of distortion, some opinion may be formed by examining by the vagina: if the projection of the sacrum cannot be felt by the finger, directed backwards and upwards from under the pubes, we may conclude there is no considerable deformity; but if we can reach it, we may judge by the readiness with which we discover it, of the degree of the distortion, and of the consequent obstacles it may present to delivery. Much uncertainty, however, attends forming an accurate opinion on this subject; and conclusions, which have determined the use and application of instruments, have been admitted even by experienced practitioners, which have afterwards been found to be erroneous.

24. By reviewing and reconsidering all this apparatus, we may in some measure understand the economy of nature, and the wonderful resources she possesses to accomplish this, her great work, the birth of a child: and particularly we must see, how unavailing and absolutely useless, are all those dangerous, but too common efforts, which many practitioners make to aid the delivery, by scooping and stretching the soft parts of the mother, to make room, as they vainly imagine, for the child to pass. All resistance of any consequence in a well-conducted labour, is made by the bones, and this the midwife cannot lessen. I shall have gained a great point when I have convinced my reader of this important *truth*; and if I succeed to any general extent, shall have in a great measure accomplished the end and principal object I have in view, in composing

this essay;—removing from the minds of our midwives and too many practitioners, a prejudice, the fruitful source of many dangerous errors in their practice; and which are so common in all countries, that there is not a writer on midwifery who does not reprobate and complain of them, and attribute to them most of the difficulties and danger which occur in tedious labours. The knowledge of these circumstances is the basis and grammar of all safe and judicious practice in midwifery. They should, therefore, be carefully studied and thoroughly understood by every practitioner.

SECTION III.

PLATE VII.

Contents of the Pelvis.



25. In this lateral section of the pelvis, the bladder of urine, the unimpregnated womb, and the straight gut, are represented pretty nearly in their natural situations.

A, the last vertebra of the loins.

B, the sacrum or rump bone.

C, the pubes or share bones.

D, the vagina, or canal leading from the external orifice to the womb. It is supposed cut through the middle, and the right half removed, to show its course and connection with the neck of the womb. The lower and posterior part is longest; the upper and anterior shortest. It consists of two membranes, which are so lax, as to be formed into plaits and rugæ on the inner surface, by which structure it admits of great and easy distention during labour; and is, at the same time, so elastic, that it soon returns again to its natural dimensions. Between these two membranes run the blood vessels, and among those are placed a considerable number of glands, which secrete a mucus, with which the vagina is always lined, and which is greatly increased during labour. Hence arises the danger and absurdity of irritating these very tender parts, by frequent and unnecessary examination; by which the parts themselves become inflamed, the secretion of this salutary mucus is checked, and the distention of the parts, and the easy passage of the child's head are prevented.

E, the external orifice.

F, the bladder of urine, moderately distended before the womb.

G, the unimpregnated womb, lying between the bladder of urine and the straight gut.

H, the straight gut behind and below the womb.

I, the perinæum, or that portion of skin which lies between the external orifice and the anus. It

is about two fingers broad in the natural state, but capable of great distention in time of labour, unless it has been irritated and inflamed by unnecessary handling; in which case it is very apt to be torn.

K, the anus.

L, the neck of the womb and internal orifice hanging a little down in the vagina, in such manner, that the anterior is longer than the posterior lip.

M, the urethra, or urinary canal, connected with the vagina and womb.

N, the left thigh cut off.

O, the buttock.

26. From this plate the student may not only learn the names of the parts, and their relative situation and connexions; but he will readily see and understand the reason why diseases or changes of the womb, bladder, and straight gut constantly affect each other. The enlarged womb must press on the gut and retard the passage of the excrement; the neck of the womb may press on the neck of the bladder and prevent the exit of the urine; or the body of the womb may press on the fundus of the bladder and prevent its retention. If the womb fall lower down into the vagina than its natural situation, it must drag the neck of the bladder with it; or if the over-distended bladder rise up above the pubes, it must carry the neck of the womb with it; and inflammation, tumours, or ulcers of either of these parts must readily be communicated to the others.

27. By attending particularly to the situation and direction of the straight gut, and the urinary canal, he will be taught more easily and more skilfully to perform two common operations, administering a clyster, and introducing the catheter to draw off the urine. It seems hardly necessary to give directions for administering a clyster; yet if we observe the

situation of the anus, and course of the straight gut, we shall see that by raising the hands towards the patient's thighs, and directing the pipe a little upwards, but chiefly backwards, we shall introduce it with more ease; and by keeping it in that direction, throw the injection further up the gut, and consequently the operation will prove more effectual. It is a common error to choose too small a pipe; a large pipe is more easily introduced than one that is too small.

28. Introducing the catheter, in the female, when the midwife is properly acquainted with the situation of the orifice, and the direction of the urinary canal, is an operation of little more difficulty than administering a clyster; except where certain obstacles occur, which are to be overcome, more by patience and gently repeated attempts, than by any remarkable skill. From motives of delicacy alone, this easy operation ought to be in the hands of women; but what is of much more consequence is, that if a man is to be sent for every time it may be necessary to perform it, it will generally be neglected too long, particularly in the country; to the very great injury, and in some instances, danger of the patient. The orifice of the urethra or urinary canal, is situated under the arch of the pubes or share bones, and the canal making a slight curve ascends very little, and enters the bladder almost immediately behind it, (M;) it is not above one inch and a half long, so large as to admit a catheter of the size of a goose-quill, and so little curved that a straight instrument is by some preferred. Having discovered the orifice, the operator, standing or sitting on the right side of the patient, and holding the instrument in the right hand, with the hollow of the curve towards the patient, is to introduce it; directing the point at first a little downwards and backwards, then

gently depressing the hand, raise the point a little upwards and forwards: it will almost immediately enter the bladder, and the urine will flow from its extremity. If, however, some little difficulty should occur, patience, and gently moving the hand from side to side, or upwards and downwards, will overcome it with very little or no force; and with little pain to the patient. At any rate, force is never to be used; it is better to desist, and make a second or a third attempt: for whenever any difficulty presents, it is owing to circumstances not to be overcome by violence, which can never do good, but may do infinite mischief. The causes of such difficulties, and the manner of removing them, will be explained hereafter; one mean, is putting the instrument when introduced into the orifice, into the hand of the patient; who, directed by her own feelings, will sometimes succeed more easily than any other person: a caution however, necessary to be observed respecting the use of the catheter, is not to introduce it unnecessarily; or before such remedies as warm bathing, fomentations, a clyster, soft mucilaginous drink, No. 2, with nitre, or mild anodynes, No. 14, according to the nature of the case, as shall hereafter be pointed out, have been tried: because, when it has once been introduced, it is frequently found necessary to repeat the operation, from the increased sensibility it induces on the urethra and neck of the bladder. In this plate, all the appendages to the womb, the fallopian tubes and ovaria, together with the flesh, muscles, and cellular membrane which line and fill up the cavity of the pelvis, and connect the several organs, are omitted; in order to exhibit a more distinct representation of the parts most essential for the information of the midwife.

SECTION IV.

PLATE VIII.

Of the Womb and its Appendages.

29. This plate is intended to represent the womb, the fallopian tubes, and ovaria dissected from the surrounding membranes: on the right side, as they appear in the unimpregnated state; on the left, soon after conception.

A, the uppermost part of the womb, called the fundus.

B, the body of the womb.

C, the cervix or neck of the womb.

C

D, the internal orifice, called os tinæ.

E, the fallopian tubes with their fringed extremities.

F, the ovaria or egg-beds, by extirpating which, the animal loses the power of conceiving; they are, therefore, supposed to furnish whatever the female contributes to generation. All these organs are enclosed in a duplicature of the peritonæum, which leaving them forms the broad ligaments of the womb.

PLATE IX.



30. This plate represents the internal structure of the same parts, after making a perpendicular section of the womb and removing its anterior parts.

A, the sides of the womb; they are of very con-

siderable thickness, and consist of muscular fibres running in every direction, leaving between them interstices filled with a mucilaginous fluid.

31. B, the cavity of the womb, of a triangular figure, lined with a very delicate membrane, and furnished with numerous vessels, which terminating by open mouths in the cavity of the womb, or bursting open from time to time, yield the menstrual blood. This has been frequently proved by the dissection of women who have died during the period of menstruation, in whom these vessels have been found very turgid, and the whole cavity, but particularly that of the fundus, spotted with bloody effusions.

32. C, the canal of the neck of the womb, lined with a rugous membrane, between the folds of which may be seen the open mouths of vessels which secrete a viscid mucilage, which plugs up the neck during pregnancy.

33. D, the fallopian tubes, cut open, showing them to arise from the upper angles of the cavity of the womb, into which the openings are so small as to admit only a hog's bristle; from hence they gradually enlarge, until they terminate at the fringed extremities in orifices of the size of a large goose-quill.

34. The ovaria, (plate VIII. F) are two flat oval bodies of a glandular appearance: upon cutting open such as have been taken from the body of a healthy young woman, a number of vesicles, from eight or ten to fifteen or twenty, of different sizes, joined to the internal surface by cellular threads, and containing a fluid, are discovered. There is great reason to believe these to be real eggs, and that they contain the rudiments of the future embryo. They are generally found in different states of maturity,

some very small and obscure, others more distinct and prominent. (See plate xi, fig. 1.)

Changes in consequence of Conception and Pregnancy.

35. Upon opening the body of a woman who has died within three weeks after impregnation, the womb and all its vessels, the fallopian tubes, and ovaria, appear considerably enlarged; the parts themselves swollen, and the womb in particular more soft and spongy: the fimbriated extremities of one or both the fallopian tubes appear turgid with blood, and turned inwards upon the ovarium of the same side, embracing some parts of it very closely, in order to receive from it what the woman furnishes in generation: somewhat as represented on the left side of plate viii.

36. Upon making the same perpendicular section of the womb at this time, as represented in plate ix., the cavity, still empty as it respects the ovum, is found to be more or less lined with a shaggy coat, consisting of very fine and tender vessels, shooting out from its sides or hanging down from its fundus. (See plate x.) This coat is first formed at the fundus, and round the orifices of the neck, and of the fallopian tubes, but soon after lines the whole cavity. It is never found in the unimpregnated state, but is decidedly a production of pregnancy, preparing the womb for the reception and attachment of the ovum, and for the nourishment of the embryo; it is separated and cast off at delivery, hence called *membrana decidua, caduca*, &c. Upon close examination in its most perfect state, it is found to be a double membrane; the outward coat, or that next the sides of the womb, perforated at the three openings of the fallopian tubes, and neck of the

womb; the inner or that next the cavity of the womb entire, without opening or perforation.

37. The *ovarium* being carefully examined at this period, from the second to the end of the fourth week after conception, that part of it which was embraced by the fallopian tube has been found enlarged, and rising from the surrounding surface, (plate xi. fig. 2) and upon carefully dividing the integuments which cover this prominent part, a small vesicle has been seen to escape from it; at other times this vesicle, of the size of a pea, has been found in the course of the tube towards the womb; and on some rare occasions, having altogether missed the orifice of the fallopian tube, it has fallen into the cavity of the abdomen among the intestines.

38. Some time between the fourth and the eighth week, (the exact period has never been ascertained, and probably is not much limited,) the vesicle is to be found in the cavity of the womb: it enters from the fallopian tube, through the opening in the outward coat of the deciduous membrane, insinuates itself between that and the inner coat, and as it increases in size, pushes the inner coat down before it, makes of it an outward coat to itself, and forms what Dr. Hunter, from this circumstance of its being reflected over the ovum, has called *decidua reflexa*.

PLATE X.



This plan is intended to illustrate this subject.

A, represents the decidua vera lining the womb, and formed before the ovum enters it.

B, the ovum.

C, the decidua reflexa, beginning to be formed by the growth of the ovum behind it. One end of this economy seems to be to secure the attachment of the placenta to the fundus or upper parts of the sides of the womb; for although now and then the placenta is found attached to other parts of the womb, and sometimes even over the very internal orifice; yet this is an accidental circumstance, probably owing to a want of due resistance in the inner coat of the decidua; and ninety-nine times out of a hundred the attachment of the placenta is found to be near the orifice of the fallopian tube, most frequently towards the fundus.

39. On examining the prominent part of the ovary soon after the vesicle has escaped from it, a

fissure of the integument is observed, which healing after some little time, leaves a cicatrix or scar, (plate xi. fig. 2) and these cicatrices are said always to equal the number of times a woman has conceived. Taking off the outward coat of the ovarium at this part, with the upper part of the prominence, an oblong substance, of a yellowish colour, appears within, very vascular, except at its centre, which is whitish, and in the middle of the white part a small cavity; these yellow substances, called corpora lutea, are found in the ovaria of all animals when pregnant, and always in proportion to the number of conceptions found at that time in the womb: for which reason they are supposed to be cavities from which the ova had escaped.

PLATE XI.



Fig. 1, represents the ovarium of a healthy young woman, cut open to show the vesicles.

Fig. 2, shows the prominent part of the ovarium, and the cicatrix through which the ovum passed.

Fig. 3. The ovarium, cut open after impregnation, showing the corpus luteum and cavity from which the ovum escaped.

Such are the facts which have induced most modern physiologists to conclude, that the female furnishes the rudiments of the new animal, and that the office of the male is to contribute to its form, and to excite and stimulate it into life.

40. During the early months of pregnancy, the womb receives a very slow and gradual increase of its bulk, nor is it before the end of the third or the beginning of the fourth month, that it can be felt rising above the pubes. Before this period, its increase is confined to the fundus and body, which at first sink lower down into the pelvis; and the neck, so far from being diminished, is from the general turgescence rather lengthened, as well as enlarged in all other dimensions. On examination, therefore, the internal orifice is felt lower down in the vagina than in the unimpregnated state. In the fifth month the womb begins to render the belly tense, and may be felt like a ball, rising to the middle point between the pubes and the navel; in the seventh it reaches to the navel; in the eighth to half way between that and the extremity of the breast bone; in the ninth it nearly touches that bone, at least in the first pregnancy; when the resistance made by the integuments prevents its hanging so much over the pubes, as in after pregnancies it generally does.

41. From the time that the ovum fills the womb, (that is, from about the middle of the fourth month,

but not very evidently before the fifth, or the beginning of the sixth month,) the thick and long neck of the womb begins gradually to develop, and its cavity to become a part of the cavity of the womb, until at length nothing more than a mere ring remains, which forms the internal orifice. As the neck shortens, the orifice recedes from the touch, so that although easily felt until the end of the fifth or sixth month, it can hardly be reached during the ninth: when again the womb beginning to act, a general subsidence of the whole abdomen takes place, and the internal orifice is brought once more within reach. By comparing this corresponding shortening of the neck, and retirement of the internal orifice of the womb, with the height to which the fundus rises at different periods of pregnancy, and the time at which the menses ceased to flow, an experienced practitioner may at any period form a tolerable judgment how far the woman has advanced.



SECTION V.

Structure of the Ovum.

42. It is generally allowed by anatomists, that the ovum does not enter the cavity of the womb before the end of the first month of pregnancy, but that it is frequently found there soon after. When first discovered, it is a soft oval mass, fringed with vessels, and on carefully examining it, it is found to consist of three membranes, with a small mucilaginous body, the future foetus, closely attached to the inner membrane, and surrounded with water.

By the end of the eighth week or beginning

of the third month, all these circumstances have become more distinct, and consequently better subjects for examination. The ovum now is nearly as large as a hen's egg; the attachment to the womb by the placenta has commenced; the fœtus, about the size of a bee, has receded from the fundus, and hangs in the surrounding fluid suspended by the umbilical cord; as is represented in the following plan, in which the front of the womb and ovum, are supposed taken off, whilst at the same time the fluids are supposed not to escape, but to remain and keep all the membranes and fœtus in their natural situation.

PLATE XII.



43. A A, the sides of the womb,* no way diminished in thickness, which thickness they retain through the whole period of pregnancy: the increase of size being a power of growth with which the womb is endued, independent of any distending force exerted by its contents; and which is so conducted, as at every period of pregnancy, until the membranes are broken, and the waters discharged, to allow room for the fœtus to move its limbs, and in some measure change its posture.

44. The development of the neck does not proceed entirely in the same manner; but as it is distended, rather grows thinner; particularly at the lower part, which sometimes is reduced to the thickness of a few folds of paper; and when stretched over the child's head, has in some few cases been burst by the throes of labour, or by the rude introduction of the hand, or by an unskilful use of instruments.

45. B B, Decidua vera, the deciduous membrane, completely lining the cavity of the womb.

C C, Decidua reflexa, or the inner lamina of the deciduous membrane reflected over the ovum, which by the end of the third month fills the cavity of the womb, so that the decidua vera and decidua reflexa blend and unite their spongy vessels; after this the neck of the womb, which is not lined with the decidua, begins to develop, and that membrane not being capable of extension, and perhaps having performed all that was required of it, begins to give way, and at the bottom of the ovum its own membranes, the chorion and amnion, frequently appear smooth and naked.

46. D D, the outward membrane of the ovum, the chorion, on the inside at all times smooth; on the outside, in the early months, shaggy and vascular. This flocculent surface of the chorion consists

of the minute extremities of the vascular system of the ovum, by which it is supposed to absorb what is necessary for its growth, before its attachment to the womb by the placenta is completely organized.

47. *E E*, the amnion, a fine transparent membrane, which immediately involves the fœtus; it is very pellucid and thin in the early stages of pregnancy, but acquires considerable thickness and strength in the latter months.

48. Between the chorion and amnion a gelatinous fluid, as transparent as crystal, is interposed, more plentiful in the early months, and gradually diminishing as the pregnancy advances; so that in the latter months these membranes come in contact with each other. This fluid resembles the white of an egg, and is supposed in the early months to contribute to the support of the fœtus, as the white does to that of the chick.

49. Between these membranes likewise, in the early months of pregnancy, a small vesicle, (*H*) is found, containing a white fluid, and thence called *vesicula alba*; it is connected with the navel of the fœtus by an artery and vein; its use is not known.

50. Within the amnion is contained a thin watery fluid in which the fœtus is suspended; the quantity of this fluid at first is very great in proportion to the size of the fœtus, by which its minute and delicate texture is better defended from injury; but this proportion is gradually diminished, so that at full time, the weight of the fœtus exceeds that of the water of the amnion three or four times; yet the absolute quantity of this water is commonly greater, at the commencement of labour than at any other period. It differs too, greatly in different cases, so that while some women scarcely discharge a pint or half a pint, others discharge several quarts. In a healthy state, it is of the nature of the serum of the blood, mixed

with a proportion of coagulable lymph, colourless, and without any disagreeable odour. On other occasions, full of flaky matter, and of a fetid odour. During labour the membranes being forced through the orifice of the womb, in form of a sack filled with this fluid, assist in dilating that organ.

51. *F, the placenta*; as soon as the ovum passes from the fallopian tube into the womb, through the opening in the outer coat of the decidua, and lodges between that and the reflected portion, the flocculent vessels of the chorion blend and unite with those of the decidua. From the irritation of this new substance, a greater action is excited, and an increased flow of humours solicited to the part; and most probably the placenta begins immediately to be formed, although neither that nor the cord is very apparent until several weeks thereafter.

52. *G, the fœtus*, suspended by a short cord from the placenta, and hanging freely in the water of the amnion. The cord is attached to the navel of the fœtus, so that the head and upper parts of the trunk are the heaviest, and consequently the head hangs down towards the neck and internal orifice of the womb. This is the natural position of the child, which, except in a few preternatural cases, it invariably preserves from the beginning to the end of pregnancy; and as this is the most favourable presentation, nature has made wonderful provision to secure it, in the part at which the ovum enters the womb, and that to which the placenta is most readily attached, both being near the fundus; in the quantity of water in which the fœtus swims, and in the part of the body of the child to which the cord is attached: so that we no longer wonder at the great regularity which in this respect is observed.

53. About the eighth week, the fœtus, the size of a bee, is still gelatinous, consisting of two oval masses, the head and the trunk; on the largest, two

dark spots mark the eyes, a small eminence the nose, and a small opening the mouth; the limbs appear just sprouting from the shoulders and hips. After this, the growth of the fœtus, and the development of the parts very rapidly proceed, so that by the sixth month it is perfect in shape and form; except that the hips and lower extremities still bear, (as they do even at birth,) a less proportion to the head and trunk, so as to give those greatly the preponderance.

54. Between the fourth and fifth months, the motion of the child first becomes sensible to the mother, which sensation is called quickening, at which period women in general suppose themselves half gone.

55. *The cord*, by which the fœtus is suspended from the womb, consists of two arteries and a vein, singularly convoluted and twisted round each other; the arteries arising from the internal iliacs of the fœtus, come out at the navel, and carry the blood from the fœtus to the placenta, into which they plunge and ramify into very minute branches. The vein, (which in size is equal to both arteries,) begins by its most minute ramifications in the placenta, and carries the blood from the placenta to the fœtus; entering likewise at the navel, it joins the vena portarum and vena cava, and after sending a portion of the blood to the liver, conveys the remainder directly to the right auricle of the heart, from whence a part passes to the right ventricle, from which a small portion is distributed by the pulmonary artery to the lungs, sufficient for their growth and perfect development; but as the fœtus does not breathe, and the lungs cannot expand, no more can pass that way. The fœtus is, therefore, supplied with a canal, (called ductus arteriosus,) which arising from the trunk of the pulmonary artery, carries the remainder of that portion of

blood immediately to the descending aorta; another portion passes through a hole in the septum of the heart, immediately from the right into the left auricle, and from thence by the left ventricle into the aorta, to be distributed to every part of the body; and again to be returned successively by the internal iliacs, and the arteries of the cord to the placenta.

56. *The placenta* is a spongy cake, consisting of two portions, one manifestly formed by the minute ramifications of the vessels of the cord, connected by a large portion of cellular matter, which is properly called the *fœtal* part of the placenta: the other formed in like manner, by elongated arteries and veins of the womb, and is the *maternal* part of the placenta. Neither the arteries nor veins of the maternal part ever inosculate into continued canals with the veins and arteries of the *fœtal* part of the placenta; but the arteries of the womb pour out a certain portion of the blood they carry into the cells of the *fœtal* part of the placenta; from whence, as is necessary for the support and growth of the *fœtus*, it is absorbed by the branches of the umbilical vein: and the arteries of the cord, in like manner, pour out their contents into the cells of the maternal part of the placenta; from whence it is absorbed by the veins of the mother. If, therefore, the vessels of the cord be cut or ruptured, the *fœtus* bleeds to death, whilst the mother does not suffer, or suffers very little. And if the placenta be torn from the womb, so as to rupture the maternal vessels, the mother bleeds to death; after which the *fœtus* has been taken from the womb alive; or when left, dies only in consequence of the death of the mother: nor can we admit one remarkable case mentioned by Baudelogue, or one or two more equivocal, by others; and all probably the result of

accident or disease, to contradict this otherwise universally acknowledged fact; and to prove a more direct communication between the vessels of the mother and child. A late number of the *Journal de Medecine* of Paris, announces that a Monsieur Chaussier had succeeded in throwing an injection of quicksilver from the veins of the cord into the veins of the womb; although he, as well as all others, had failed in attempting to fill the veins of either, from the arteries of the other. But admitting the fact, that mercury by its great weight, urged by the pressure of the piston, had found, perhaps burst its way, from the veins of the cord, through the cells of the placenta into the veins of the uterus, surely, no physiologist can be so absurd, as to deduce from such an experiment, a direct vascular communication between two veins; one of which carries blood from the placenta to the heart of the fœtus, and the other, in a course directly opposite from the placenta, to the heart of the mother.

57. It appears, therefore, that a portion of the blood of the mother, after having been duly prepared by her powers of digestion and respiration, is deposited in the cells of the placenta, by the arteries of the womb, whence it is conveyed by the veins of the fœtus, carried to the heart, and thence distributed to every part of the body, for its nourishment and growth; and having performed these offices, it is carried by the arteries of the cord back to the placenta, thence to be taken up by the veins of the mother, and carried into her habit to receive fresh supplies of oxygen and nourishment. This doctrine, which attributes to the lungs of the mother the office of oxygenating the blood necessary for the life and growth of the fœtus, has been constantly taught by my friend Dr. Hosack, professor of the theory and practice of medicine in the College of Phy-

sicians and Surgeons of New-York; and so easily and naturally accounts for all the phenomena, that we are surprised to see ingenious men, seeking their explanation from less evident sources, or by any other economy. It attributes to the organs of the mother, powers which we know they possess, those of preparing the nourishment for the fœtus; to the placenta all that is required of it, to receive and place this nourishment within reach of the vessels of the fœtus; and to the organs of the fœtus such powers only as we see, in the instance of the egg. they are at all times equal to, that of absorbing this nourishment, already prepared, in such quantities as at the different periods of its existence are necessary for its support and growth.

CHAPTER II.

ON PREGNANCY, ITS SYMPTOMS AND DISEASES.



SECTION I.

Menstruation.

58. EVERY woman believes that her health and capacity of becoming a mother, depend on the regularity of the monthly discharge. She has great reason for this opinion, at the same time that it must be confessed, there occurs great variety, in this respect, between different women; and that every deviation from the common standard, in the same individual, so far from being justly considered as the cause of the ill health which generally accompanies it, ought more frequently to be considered as the consequence; and that the preceding impaired state of health, is generally the cause of the irregularity in menstruation. All attempts, therefore, to relieve such irregularities ought to be, and by judicious physicians commonly are directed, to alter and change the state of general health; and much harm has been done, particularly in consumptive and other cases of great weakness, by attempts to bring on and force this evacuation, at a time when nature is unequal to it, and when the remedies employed are injurious.

59. Mothers, with equal reason, are anxious for their daughters about the period of their first menstruation, as their future health may greatly depend upon the happy establishment of this change in their constitutions: but in this instance also, it should be known, that success depends on general health; and consequently upon their treatment of their girls in infancy, and during their education: according as that has been well or ill conducted, perhaps in exact proportion as they have been indulged in constant and free exercise in the open air; as they have been restricted from all weakening habits, sedentary occupations, indolence, soft beds, and late hours in and out of bed, will they pass happily through this critical period of their lives.

60. The period at which young women begin to menstruate, is very different in different countries, and like all other instances of growth and maturity in vegetables as well as in animals, seems to depend upon climate and the influence of the sun. Between the tropics, girls begin to menstruate so early as eight, ten, or twelve years of age; in the colder regions of the north, not until they are upwards of twenty; and in temperate climates, as in this country, between fourteen and eighteen. The manner of life, too, has, to a certain degree, the same effect; indolence, luxury, and full feeding, bring on this discharge at an earlier, whereas, hardship, labour, and a spare diet, postpone it to a later period; and the quantity of blood naturally discharged at each period, seems to depend on the same causes; so that what in a cold country would be deemed excessive, in a hot climate may be no more than is natural. And independent of either climate or disease, there exists a considerable variety in the regularity of the return, as well as in the duration of each period. In some women, the menses return with surprising

regularity at the end of twenty-eight days, in others they either anticipate, or are retarded a few days without inconvenience; in some the discharge is over in a few hours, in others it lasts a week or ten days, but in general not above three or four.

61. Of the proximate cause of menstruation, very different opinions have been entertained by physiologists, some attributing it to a general, and others to a partial plethora; some to the influence of the moon, and some to the existence of a particular ferment in the womb; but the latest and most probable opinion is, that it is a peculiar secretion, the womb in the female, at the period of puberty, assuming the office of a gland: the fact that pure menstrual blood does not coagulate like that from a wound, seems to favour this opinion. Of the final cause of menstruation there seems to be no doubt, and it is by all confessed, that by the accession of the menstrual discharge, the womb is at first fitted for, and by its continuance preserved in, a state capable of conception.

62. In most instances this change in the constitution of girls, is gradual, the menses at first appear in small quantity, and return at long and irregular periods; but in most are unattended with any symptoms of disease; and although some pain in the back and inferior extremities, and some complaints of the stomach and bowels may proceed or attend the first eruption of the menses, these symptoms seldom require any particular remedy, but commonly go off, as soon as the period is over; and generally in a healthy constitution are perceived less and less at each succeeding period, until the evacuation is fully and regularly established. But in some few cases the commencement is attended with greater difficulty, and in very many women irregularities in the menstrual discharge become

either the cause, or a very important symptom of disease, and therefore demand a particular consideration. These irregularities may be comprehended under the terms of retention, suppression; excessive, deficient, and painful menstruation.

63. *Retention of the Menses.* In this complaint, the general rules are, that robust and florid girls, when about the age of fourteen or fifteen they begin to complain of flushings, headache, and general uneasiness, should observe a spare diet, consisting chiefly of vegetables, use moderate exercise, and carefully avoid all that is violent, particularly in crowded and heated rooms; should not only keep their bowels open, but occasionally take some active purgative, such as (No. 9. b. c. or No. 10. a. b. c.) If the symptoms continue or increase, and the evacuation does not take place, the safest and most effectual remedy is periodically to lose some blood, to the amount of four or six ounces, at the end of twenty eight days, for a few months; bathing the feet and legs in warm water, or sitting in warm water for half an hour, a few evenings before, and postponing the bleeding a day or two after each period, to see if the natural evacuation does not take place.

64. On the contrary, relaxed and feeble young women, who are much more subject to such delay in the first appearance of the menstrual evacuation, should make use of such remedies as tend to strengthen the habit in general, such as bitters, (No. 16. a. b. c.) a glass of good wine, constant exercise in the open air, particularly riding on horseback, or in a common wagon; when not too much enfeebled, should use the cold bath, and, if in their power, should drink chalybeate waters, at some of the public watering places; and those to whom this may be inconvenient, should take some mild pre-

paration of iron; (No. 16. e.) this remedy should be preceded by a vomit and an active cathartic, to cleanse the first passages; after which the tonic remedies will have a better effect. Having by these means strengthened the habit, they may take aloetic purgatives, a dose or two of rhubarb and calomel, have sparks drawn from them at an electric machine, and use warm bathing, by sitting in a warm water bath. This last remedy should be used a day or two before and after the expiration of twenty-eight days.

65. The retention of the menses in young women is frequently preceded or accompanied by symptoms of chlorosis, in which every symptom of languor and feebleness prevails; a pale and even greenish complexion succeeds to the rosy hue of health; the lips and gums become almost white, the breath offensive, the skin under the eyes puffy and of a lead colour; the whole body lax and œdematous; the judgment, memory, and natural cheerfulness impaired; the pulse is generally slow and feeble, but easily excited by the slightest exertion, and is then accompanied by shortness of breath, palpitations of the heart, faintness, and an almost unconquerable disinclination to motion. The appetite becomes depraved, she finds gratification in chalk, lime, pieces of wall, and other improper substances, and the bowels are commonly costive. This disease has by most authors been attributed to some defect in the development of the organs of generation; by some it has been considered as the cause, by others as the consequence, of retained menstruation. Costiveness, if not the cause, as has been supposed by a late ingenious writer on purgative medicine, is a constant attendant and very important symptom of this disease, and therefore must in the first place be removed by some mild purges, such as (No. 9. b. c. d.) and by persisting in

their use until all the sordes which have been collecting, most probably for a considerable length of time, shall be removed. After this is effected, and not before, the happiest consequences may be expected from the use of the strengthening remedies recommended in the last paragraph, except that they must be entered upon with greater caution, in proportion to the debility of the patient. In hot weather, sea bathing, and in cold, the warm bath is to be preferred; the exercise must be moderate, and never go the length of fatigue; and the unwillingness of the patient overcome by proposing such as is pleasant and amusing. The constant attendance, and the very ill consequence of costiveness in this disease, should suggest to mothers the great importance of attending to the state of the bowels in their daughters; and carefully to guard them against that habitual costiveness, into which, from neglect, they are apt to fall.

66. Again, retention of the menses may occur in young women with florid complexions, but at the same time of very delicate constitutions, and subject to a slight cough, pains in the breast, and with a predisposition to consumption. Such cases require the utmost caution, and in them an antiphlogistic diet, small bleedings, mild laxatives, a temperate climate, warm dress, and moderate exercise are essential, and when it can be accomplished, a sea voyage will probably prove the most useful remedy.

67. *Suppression*, in which the menses after having been fully and regularly established, are suddenly suppressed, is the only species of this complaint which is to be considered as an original and idiopathic disease. The most common causes of this, are exposure to cold, violent exercise, and great agitation of mind, during the flow of the menses.

The cure should be immediately attempted, and in that case is generally accomplished with ease, by bathing the feet and legs, or by sitting in warm water, with a garter tied moderately tight above the knee, with sudorific anodynes aided by infusions of catnep or pennyroyal, and aloetic purgatives. When these remedies do not succeed in the first instance, they should be repeated two or three nights successively, a little before the proper period for the return of the evacuation; if they again fail, the patient should immediately lose blood; and if she be a woman of a full and sanguine temperament, this should precede all other remedies; in all cases the bowels are to be kept freely open by aloetic purgatives. After these remedies have failed, and not before, we may have recourse to such remedies, as, from a supposed specific action on the womb, have been termed emmenagogues, such as myrrh, aloes, madder, electricity; savin, spirit of turpentine, cantharides; seneka snake root, and guaiacum. Of these the four first are safe, and may be had recourse to without much hesitation; the savin, spirits of turpentine, and cantharides are highly stimulating, and require much caution in their use; the seneka and guaiacum, in the form of the volatile tincture, have been lately recommended and highly extolled, and from their sensible qualities and known effects, promise to be useful. When the obstruction has continued so long, that the constitution may be supposed to have lost the habit of making the regular effort, small bleedings repeated at the proper time, and drawing electric sparks from the hips and loins for a few evenings, with warm bathing, will contribute to its return.

68. A sparing and painful menstruation is to some women a very distressing complaint: besides carefully attending to all the rules of general health, it

is necessary on these occasions carefully to avoid cold; to be confined for a day or two, and to take freely of tepid drinks through the day as well as on going to bed, so as to preserve an easy moisture on the skin; to use the warm bath, or to sit over the steam of hot water, and when the pain is very severe it must be relieved by opium. A dose of camphor, in the quantity of ten or twelve grains, will sometimes give immediate relief; and should the first dose fail, a second may be given in two or three hours, combined with laudanum. Small bleedings and electricity, just before or immediately on the approach of the symptoms, and a blister applied to the sacrum, have frequently been found of use.

69. But besides what may arise from ill health, and accidental causes, *severe pain* is in some women a constant and perhaps necessary attendant on menstruation. In such cases it has been observed, that a membranous bag, triangular in its form, like the cavity of the unimpregnated womb, smooth on the inside, and flocculent on the outside, resembling the decidua of early abortions, is discharged at each menstruation, and is followed by a discharge of some blood, and that this happens in the unmarried as well as in the married state; so that it is independent of impregnation, and on the contrary, generally, if not always, occasions barrenness. Morgagni (Epist. 48, art. 12) and Denman both describe this disease with great accuracy, and agree in this opinion of its nature; attributing it to a preternatural disposition in the unimpregnated womb to form the deciduous membrane. As yet no certain cure has been discovered for this complaint: mercury, guaiacum, and seneka have each their advocates; the two latter have been recommended with great confidence; but if we admit its nature, which seems to be pretty well demonstrated, it is manifest that a total change

of a constitutional nature must take place before it can be cured, and such a change is always a work of great difficulty. It may be palliated by most of the remedies recommended in the last paragraph.

70. The natural quantity of this evacuation is so different in different women, that it is by its effects only we can judge of what is scanty or profuse. When a scanty evacuation is followed by general uneasiness, a sense of fulness, flushings, and headache, it may be considered as morbid, and treated as a case of suppression. When a considerable flow is followed by languor, paleness, and general weakness, it is to be considered as profuse, and proper means should be taken to restrain it; but these will differ considerably according to the constitution of the patient. A distinction is also commonly made by practical writers, between a profuse menstrual discharge, and an hæmorrhage from the womb; but all profuse discharges of blood from the womb, if not in the first instance, immediately thereafter become hæmorrhages, and are to be treated as such upon general principles.

71. When therefore febrile symptoms, such as headache, an oppressed breathing, increased heat, a full and quick pulse, precede or accompany a sudden and profuse flow of the menses, the evacuation frequently becomes its own cure; and if the woman be careful to keep her bowels open, to observe a spare diet, to drink only cold water, to observe great moderation in exercise, and to keep her person cool by thin clothing, a hard bed, and free exposure to air, she may not only moderate the evacuation in future, but probably will derive considerable advantage from its present excess. But if, notwithstanding these precautions, the flow should continue or return, she must lose blood from the arm, and after that may cautiously have recourse to

the remedies which are directed in the following paragraph to check a profuse evacuation in women of weak and relaxed habits.

72. In relaxed and feeble constitutions, a profuse flow of the menses is a more frequent and a more serious complaint. During the flow such women should be confined to a horizontal posture, on a hard bed, keep their persons cool, take cold astringent drinks, such as an infusion of rose leaves or oak bark, acidulated with the vitriolic acid; at the same time cloths wet with cold water or vinegar may be applied to the pubis and loins, and every four or six hours eight or ten drops of laudanum be given. Vomits, or rather small nauseating doses of ipecacuanha have a powerful effect in checking hæmorrhages, in all weakened and relaxed habits; and in profuse menstruation I have frequently experienced the happiest effects from their use.

73. When these remedies fail, recourse may be had in hot weather to the cold bath, either by immersion or by having a pail of cold water poured over their persons while sitting in a tub, even during the discharge; of the success of which I have known some very happy instances. During the intervals of the discharge, such patients should use all those means which have been already recommended for improving their general health; and when the flow returns at short intervals, anticipating it by small bleedings, have a very good effect, especially when it is attended with febrile symptoms; and when it is almost constant, and attended by symptoms of debility, its presence constitutes no objection to the moderate use of wine, nourishing diet, chalybeates, or exercise, the moderate use of which, such as riding in a carriage, has often been known to suppress the discharge.

74. At a particular period of life, in our climate,

between the ages of forty and fifty, the menstrual discharge ceases with most women, in some it ceases suddenly, in others it returns after longer and longer periods, and goes off gradually; and when unattended with symptoms of disease, requires no other attention than such a regard to temperance in all things as will run no risk of interrupting nature in the important change she is about to effect. But, unquestionably, it is an important change, and is justly considered by all women as a critical period of their lives. Where, therefore, there exists any predisposition to general or local disease, particularly cancer, apoplexy, or gout, the sudden stoppage of this periodical evacuation exposes the woman to an attack: and for this reason women bear occasional bleeding at this period of life with great advantage, and in all cases of constitutional predisposition, or of threatened attack, it is the chief if not the only remedy, to be relied on, and should be repeated at proper intervals until all symptoms of alarm have ceased, and the change in habit is perfectly established. For the same reasons, all attempts to postpone the change, and continue the natural evacuation by emmenagogues and other stimulating remedies, are very improper and highly dangerous. All circumstances of pain or profusion, to which at this time women are very subject, must be treated as has been already recommended; to which may be added this general observation. that every kind of excess, particularly that of spiritous liquors, subjects women, at this critical period of life, to the most serious and distressing complaints.

SECTION II. .

Symptoms and Diseases.

76. *Conception.* It is by all authors confessed, that no part of the human body is possessed of greater irritability than the uterus, nor any part, the increased irritability of which, is more readily communicated to the system in general. The mammæ are so connected with the uterus by their office, that every affection of the womb is immediately followed by some change in the breasts; next to the breasts the stomach most readily sympathizes with the womb, and through the stomach the head and heart, are very soon brought to participate in its changes and complaints. Some of these sympathetic affections have been always enumerated as the signs of conception, and that state being ascertained, they become what are called, not always with strict propriety, diseases of pregnancy. And although such symptoms and complaints do frequently arise from other conditions of the womb, beside the state of pregnancy, yet when a young, healthy, married woman, finds the menstrual discharge does not return at its usual period, and at the same time, or soon after, begins to complain of languor, nausea, and vomiting in the morning, heart-burn through the day, and some degree of restlessness and want of sleep during the night, we run little or no risk in attributing these symptoms to pregnancy: and women who have born several children judge so accurately from their peculiar feelings and experience, as seldom to be mistaken; at the same time that the wish to have children, in those who have been long disappointed, or whose

advanced age renders it not very probable, has led many women into ridiculous and sometimes very serious errors.

77. *Period of conception.* A cessation of the menstrual discharge so constantly takes place upon conception, that with great propriety it is considered as the first, and most essential sign; and, except in the case of a woman becoming pregnant while she suckles, she may, with the greatest probability of being correct, date the commencement of her reckoning, from the middle of the period between her last menstruation, and the time when she should have menstruated again. More accuracy than this is not necessary; the approach of labour will commonly be indicated by unequivocal symptoms, long enough before to be prepared for it; and any considerable error in the reckoning, is always attended with some anxiety and apprehension.

78. *Quickening.* The first time the mother perceives the motion of the child, it is said to quicken. This happens from the end of the third to the beginning of the fifth month, most commonly some time after the commencement of the fourth; so that the woman is supposed, at that time, to be about half gone. A few drops of blood are often discharged from the vagina at this period, and it is otherwise an occasion of some little alarm, attended with faintness, and some slight hysteric affections. A more constant effect, is some relief of the sickness and uneasiness of the earlier months; owing to the circumstance of the womb now rising out of the pelvis, and being supported on the brim, by which the uneasy sensations, which before arose from its subsidence in the vagina, are removed.

79. There can be no doubt but that woman, as well as every other animal, is endowed by nature with the powers which are necessary to perform all

her natural functions; and this observation is so peculiarly applicable to the states of pregnancy and parturition, that we risk little in asserting, that all the danger of these states in a healthy, well-formed woman, arises from some error or mismanagement. Yet such is the constitution, especially of the human body, that most great changes, though natural, are productive of some uneasiness: thus pregnancy is attended by sickness, labour by pain; which, unless excessive, so far from being considered as disease, and therefore to be suppressed, are either the necessary consequences of greater advantages and enjoyments, or somehow essential to future health and safety, and require only to be regulated. This admirable observation, Dr. Denman has, with great judgment, applied to every symptom, and many of the complaints to which women are liable, from the commencement of pregnancy to their perfect recovery after delivery: many of those which occur in an earlier stage are to be considered as preparatory to those which are to follow. For this reason we should interfere with them with caution, and carefully avoid all violent remedies, and every irregularity or excess in diet or regimen, which may not only interrupt nature in her present delicate and important operations, but may lay the foundation of some untoward symptom in the succeeding labour, or some disease during child-bed.

80. The increased action of the uterine vessels, which takes place immediately upon conception, cannot long exist, without bringing the heart and arteries into consent; hence a slight fever is a very common symptom of early pregnancy. But unless accompanied by other disease, seldom rises to any height, or requires any other remedy than open bowels, a cool regimen, of which fruits and vegetables should form a principle part; moderate exercise

in the open air, and sometimes moderate bleeding. The exercise must be regulated by the habits of the patient; because what is very moderate in a woman accustomed to labour, may be excessive, and occasion ill consequences in women of sedentary habits; and the bleeding must never be copious, which in delicate constitutions will endanger miscarriage. The effects of pregnancy on the temper of some women are very remarkable; they become irritable, uneasy, and restless; and these symptoms on some occasions increase as the pregnancy advances, until they become very distressing and alarming. In such cases, small bleedings and saline purges are to be repeated, and their effects aided by the neutral mixture, (No. 12. c.) and drinks acidulated with the vegetable or vitriolic acids. Restlessness may be mitigated, and sleep often procured, by light bed clothes, and the dulcified spirit of nitre or vitriol taken at bed time in cold water; but opiates generally do harm. The friends, too, ought to remember, that the fretfulness which accompanies this state arises from disease, rather than ill temper, and demands sympathy and attempts to amuse and sooth, rather than opposition or neglect.

81. Among the symptoms of early pregnancy, *sickness and vomiting* so generally occur, as peculiarly to excite a suspicion, that they are somehow designed by nature to contribute to the woman's safety: they likewise appear to be connected with that of the child; at least, by their presence and degree, to mark its vigour and lively state, and by their sudden disappearance, to indicate its death.

When, therefore, the vomiting is moderate, and confined to the early parts of the day, it should be left to nature, at least nothing more should be done, than to direct a simple and light diet, to correct acidity, to keep the bowels open by *magnesia*, (No.

15.) and to strengthen the stomach by a cup of cold chamomile tea, or a light infusion of gentian or columbo, (No. 16. b. d.) By such means, this symptom commonly subsides within the first three or four months.

Simply to correct sourness, a tea-spoonful of fine chalk, or lime-water, (No. 15. c. d.) mixed with milk, are frequently found very effectual; but as they have no tendency to open the bowels, they are not so proper as magnesia or soda, or soda water, (No. 15. a. b.) when sickness is attended with costiveness: on the contrary, when it is attended with a lax, they are the most proper.

In other cases, when this symptom proves more severe, when the stomach continually rejects whatever food is taken, and when the vomiting not only continues through the day, but during the night, and especially when it is attended with a full pulse, some feverish heat, headache and dizziness, the loss of five or six ounces of blood becomes necessary, which may be repeated in three or four days, if these symptoms continue to call for it: this is more safe than to take away a large quantity of blood at one time, which is always dangerous in early pregnancy.

In these cases, the saline draughts, taken in the act of effervescence, (No. 12. c. a.) are very proper; or a few drops of the elixir of vitriol, (No. 16. f.) or of the essence of pepper-mint, (No. 17. b.) Laudanum or an opium plaster, or a small blister, may be applied externally to the stomach with advantage; but the internal use of laudanum should be avoided as much as possible; as, besides producing costiveness and weakening the stomach, its frequent use has been supposed, by some men of great experience, to have an ill effect upon the infant.

82. In women of weak and delicate habits, bleeding is to be used with caution; and if too much blood be drawn, or it be imprudently repeated, much harm may be done, and a miscarriage will probably be the consequence. In such habits, especially when attended with great irritability, these symptoms frequently become so excessive, and continue so long, as greatly to reduce the patient's strength, and resist all common efforts to remove them; in such cases, the external application of opium or a blister to the stomach, are peculiarly proper; and their good effects will be greatly promoted by confining the patient to little or no food or drink, not more than a spoonful or two at a time of new milk or cream, or an equal quantity of weak spirits and water; at the same time, supporting the woman's strength by nutritious clysters of milk, &c. (No. 7. a. b.) adding thirty or forty drops of laudanum to each, to occasion the clyster to be longer retained. In this way, laudanum will likewise contribute to allay the irritable state of the stomach, without any, or at least with fewer, of the ill consequences which follow its introduction by the mouth.

If this plan be attempted, it will always be necessary before its commencement, to empty the lower bowels by a common clyster, (No. 5. a. b.) and to continue to do so at least once in two days, as long as it shall be found necessary to persist in it. The nourishing clysters of broth or milk, are always to be repeated within one or two hours after the last has come away; and the laudanum is to be added or omitted, as may be found necessary. Often they will not be rejected at all, but be totally absorbed; in which case they should be repeated two or three times in twenty-four hours. When, by these means, the irritability of the stomach has been relieved, the patient must return to a fuller

diet with great caution, both as it respects the quantity and quality of her food.

In some cases, when the stomach has become charged with bilious and other depraved fluids, accompanied with an ill taste, a foul tongue, and a fetid breath; it will be found of use to precede all other remedies by a mild emetic, (No. 11. a.) and if necessary, to repeat it after three or four days; but in pregnant women, although mild vomiting does no harm, and gentle emetics are safe and sometimes necessary, the violent straining and cramps which are apt to follow the use of tartar-emetic, should never be hazarded.

83. In cases of *heart-burn*, arising from acidity, magnesia, chalk, and lime-water, (No. 15. a. c. d.) a weak solution of pearl-ash, soda, or of the salt of wormwood, (No. 15. b.) will be found very useful remedies. In some cases, in which a peculiar sensibility of the upper orifice of the stomach, more than any particular state of its contents, seems to be the cause, a solution of gum-arabic, (No. 2. c.) or the white of an egg beat up with a little sugar and water, a little new milk, or a spoonful of fresh cream, will give relief. This symptom is frequently attended with a lax, which when moderate should no further be interfered with, than by correcting those complaints of the stomach on which it generally depends. When severe, mild emetics, (No. 11. a.) bitters, (No. 16. d. a. b.) and laudanum administered in clysters, (No. 6. a.) will check it.

When this disorder of the bowels is attended with a tenesmus, or a frequent bearing down, and urging to go to stool, it requires particular attention; or the womb may be brought into action, and a miscarriage be the consequence. In this case, a vomit, after that rhubarb and magnesia, (No. 8. c.) or rhubarb and ipecacuarha, (No. 8. i.) accompanied or suc-

ceeded by clysters of thin starch and laudanum, (No. 6. a.) are principally to be relied on.

84. *Fainting and hysteric fits* depend much on the same cause as the affections of the stomach, and are always aggravated by the disorders of that organ; relieving that, therefore, has a great tendency to carry off these; but time alone is frequently the best remedy: and if we add moderate exercise in the open air, such as riding in an easy carriage, little more need in general be attempted. In full habits, moderate bleeding will be of use; but these symptoms more frequently appear in weak and delicate habits, in which bleeding, especially if repeated, only adds to the weakness, and consequently does harm.

85. *Swelled and painful breasts*, are symptoms of early pregnancy. In full habits this complaint may require moderate bleeding and mild laxatives: anointing the breasts with olive-oil or fresh hog's lard, and covering them with flannel or fur, frequently afford relief. Above all things, a loose dress is absolutely necessary; and particular care should be taken not to press the nipple into the breast, by which it has been sometimes really obliterated, so as to render it impossible to suckle. When any appearance of this takes place, wearing a thick ring of wax over it, so that the nipple may protrude it, and at the same time be defended from the pressure of the clothes, will tend greatly to form a good nipple: and any woman who has experienced the pain and trouble of a small nipple, buried in the flesh, will not think this attention, to obtain a good one, thrown away. The source of this complaint is often laid very early, in the improper dress of young women; and from its very inconvenient, and frequently distressing consequences, deserves the atten-

tion of mothers, from the time their daughters commence women. The breasts are sometimes filled with a serous secretion, at others, with milk, long before labour, and both are sometimes discharged in such quantity, as to become very inconvenient, but should never be interfered with. A sudden softening and subsidence of the breasts, and a cessation of this discharge generally denotes the death of the foetus.

86. *Costiveness*, although mostly a disease of the latter months of pregnancy, sometimes accompanies it from the beginning: when neglected, it not only becomes a very serious evil in itself, but lays the foundation for others of more consequence. It is a complaint easily prevented by a very moderate degree of attention, and regularity of habit; but it unfortunately happens, that, in this respect, women in general are very inattentive; indeed, it seems to be a part of female education to be so, the ill consequences of which many of them feel through life.

When not habitual, costiveness may depend, in early pregnancy, upon the state of the stomach; and is relieved by the same remedies; particularly by magnesia and soda; which at the same time that they correct the acid in the stomach, form with it a neutral salt, which proves laxative; when it does not, recourse must be had to mild purgatives, such as castor-oil, lenitive electuary, sulphur, cream of tartar, &c.: but above all, to clysters, which are always safe, and generally effectual. At any rate, it must be removed, or it may be the source of greater evils. Strong purgatives should never be used; repeated clysters seldom or never fail; but the power of habit, when once established, is the best preventive: it is safe, easy, and certain. It sometimes happens, through extreme neglect, that a large quantity of hardened balls, become so lodged

in the intestine, as to be almost immovable; whilst at the same time they suffer a small quantity of fluid matter regularly to pass, and thus deceive the patient. The previous symptoms, and the little relief afforded by evacuations, point out the disease; which is sometimes not to be relieved, until the effect of repeated injections, castor-oil, &c. is aided by the introduction of the handle of a spoon, or some such instrument, into the rectum, to break down the hardened excrements.

87. *Hæmorrhoids.* Among the evils which a costive habit almost necessarily brings with it, are the piles, to which many women are subject, and from which many of them suffer more than from child-bearing. A free and regular state of the bowels, is almost a certain preventive against this painful disease; and if there was no other motive, this alone would most amply repay all the attention necessary to obtain it. Attention alone is necessary: we are all the creatures of habit; and good habits are, at least in this respect, as easily established as bad ones.

The piles are seldom cured completely during pregnancy, and, unfortunately, are apt to be much increased by labour. A spare and cooling diet, open bowels, and moderate bleeding, are the best palliatives: if they are attended with a discharge of blood, laxatives only (No. 8. c. e. f.) are necessary; when swelled and painful, a bread and milk poultice, with two or three tea-spoonsful of laudanum added to it, and applied cold; or Goulard's cerate should first be applied, and when the inflammation shall be somewhat abated, one prepared with powdered galls, (No. 18. b. d.) will be found useful.

All warm and relaxing applications are hurtful; and all kinds of heating food and drinks, particularly spices and spiritous liquors, will infallibly in-

crease the complaint: indeed, it cannot be too frequently repeated, that a heating diet, and particularly spiritous liquors, are, at all periods of pregnancy and labour, so dangerous and prejudicial, that they should never be taken but by the advice of a physician.

88. *Wandering pains, &c.* Wandering pains about the face and teeth frequently occur during the early periods of pregnancy; pains in the back and loins, cramps, numbness, swelled legs, and enlarged veins, more generally towards the latter end. These complaints are free from danger, but often prove so troublesome and inconvenient, as to require, at least, some palliative remedies.

89. They will be relieved in full habits by small bleedings, by keeping the bowels freely open, by a spare diet, a recumbent posture, moderate exercise, and frictions with soft flannel morning and evening. Ether, (No. 19. h.) or volatile oil, (No. 19. a.) applied to the parts, are sometimes of use, and in the case of pains in the back and loins, and cramps, anodyne clysters, (No. 6.) now and then prove effectual remedies. In the latter months of pregnancy, the enlarged womb pressing on the veins and absorbent vessels, and preventing the return of the fluids into the circulation, occasion watery swellings, particularly in the lower extremities, and sometimes they extend to the parts of generation; by which they are often so much swelled, as to prevent the woman from walking, and in some measure even impede delivery. The only remedy in this case, is to puncture or slightly scarify the parts with a fine lancet, which is perfectly safe, and may be repeated, if necessary, even in time of labour; a cloth, wrung out of warm water, and applied to the parts, will promote the easy and perfect evacuation of the water.

90. *Restlessness and want of sleep.* The complaints enumerated in the last paragraph, are frequently aggravated in the latter months, by restlessness and want of sleep, attended with some increased heat and sense of suffocation : these require, in addition to small bleedings and empty bowels, a cooling regimen, a hard bed, and a large airy chamber ; in such cases, opium is generally improper, and in its stead a tea-spoonful of the sweet spirits of vitriol, or sweet spirits of nitre, will be found soothing and refreshing.

91. *An incontinence of urine,* is sometimes a troublesome complaint about the third or fourth month of pregnancy, but more frequently during the latter months. In the first instance, it will go off as soon as the womb rises above the brim of the pelvis : in the latter, it admits of no remedy before delivery, when it will cease of course, the pressure of the womb on the bladder being removed.

92. *A strangury or suppression of urine* during pregnancy, occurs at different periods, and is at all times a much more serious and painful complaint ; and whenever it does occur, should command immediate attention, because every moment of delay not only adds to the present uneasiness, but likewise increases the difficulty of removing it. A full and distended bladder always predisposes to this complaint. Pregnant women, therefore, should on no account place themselves in situations which may lay them under restraint in this respect ; and carefully attending to every call is very essential to their safety.

Such women, too, as are subject to any degree of prolapsus or falling down of the womb, are particularly liable to a suppression of urine, especially during the first three or four months of pregnancy ; when the womb is always lower than it was before,

or than it generally is after that period. As it increases in size in this situation, it compresses the neck of the bladder, urethra, and rectum; frequently occasioning constipation in the bowels, and a retention of urine, which generally come on gradually, and increase as the womb increases in size; until it becomes so large as to rise out of the pelvis, when again these symptoms are relieved. At other times these complaints, particularly the suppression of urine, comes on suddenly, whilst the woman is straining at stool, or forcibly discharging her urine; and in this case the womb is frequently found very low; the os tinæ protruding the external orifice. In either case, the complaint may generally be removed by pushing up the womb into the pelvis, and supporting it there whilst the patient discharges her urine: or even this assistance may be avoided by trying the effect of different postures; by lying on her back with the hips raised, or kneeling on the floor with the elbows resting on a pillow, or by lying on either side; either of which attitudes may relieve the pressure on the urethra. In all obstinate cases, the bowels should be opened by a copious injection, and if the woman be of a full habit, and finds herself flushed and heated, she should lose a little blood, and drink, though not in large quantities, barley-water, flaxseed-tea, almond milk, or one made of pumpkin or melon seeds, (No. 13. b.) these, when the suppression is only partial, and attended with much heat in discharging the urine, will generally afford relief; but whenever a total suppression takes place, the patient should avoid drink of any kind until she shall be relieved; and if she does not succeed in her attempts, recourse must be had to the catheter, (Chap. 1. 27.)

93. *Retroverted womb.* When a sudden suppression of urine occurs about the third or fourth month

of pregnancy, when it is remedied with difficulty, or only in a partial manner; when it returns frequently, and especially if it be attended with a painful bearing down, and urging to go to stool; we may apprehend an approach, at least, to this complaint; in which the body and fundus of the womb, instead of rising up through the brim of the pelvis, as at this period it ought to do, is turned backwards and downwards into the hollow of the sacrum.

94. Plate XIII. represents the pelvis, with its contents, in their natural situation, about the third or fourth month of pregnancy.

PLATE XIII.



A, the jutting in of the sacrum, and last vertebra of the loins.

B, the hollow of the sacrum.

C, the pubes or share bone.

D, the vagina cut open.

E, the external orifice.

F, the bladder.

G, the womb rising out of the pelvis.

H, the rectum or straight gut.

I, the perinæum.

K, the anus.

L, the neck of the womb hanging far back in the vagina.

PLATE XIV.



95. Plate xiv. represents the retroversion of the womb, in which, F, the distended bladder rising out of the pelvis, draws forward and upward, L, the neck of the womb, which is naturally connected with it; whilst at the same time the full bladder pushes backwards and downwards the body of the womb into the hollow of the sacrum; by which the neck and internal orifice of the womb are brought to press the neck of the bladder against the pubes, so as to prevent the passage of the urine, and the body of the womb at the same time presses on the rectum so as to prevent the discharge from the bowels.

This view of the subject sufficiently explains the nature of this disease, and the danger to which a woman exposes herself, who, at this period of pregnancy, is led from neglect, the forms of society, or any other cause, to retain her urine until the bladder becomes distended; which, in proportion to the degree of the distention, necessarily drags the neck and forepart of the womb up with it, and at the same time pushes the fundus back towards the sacrum; and brings the internal orifice to press the bladder strongly against the pubes; by which the retention of the urine, at first the cause, again becomes a most painful consequence of this complaint. It seldom occurs, and never from this cause alone, in the first or second months of pregnancy, because then the fundus uteri is not sufficiently enlarged to be pressed down by the distended bladder; nor after the fourth month, because then the womb has ascended out of the pelvis, and the fundus has become too large, to be again pressed below the brim. But it may originate very early, when the pressure of the superincumbent intestines increased by straining to vomit, to expel the fæces, or by a fall, or a blow, or any strong compression on the belly conspires to push down the fundus; whilst, at the same time, a distended bladder drags upwards and for-

wards the neck of the womb. It begins to manifest itself early, by a troublesome weight on the fundament, painful draggings in the groins, forepart of the thighs and loins, and a sort of uneasiness about the neck of the bladder and rectum, which excites a frequent inclination to make water and to go to stool. These symptoms progress from day to day, and from week to week, until a suppression of urine, and of the evacuation of the bowels come on. But whether the disease manifest itself by a sudden suppression of urine about the third month, which is the most common case; or come on slowly from an earlier period; as soon as any suspicion of it is entertained, it should command our most serious attention, because, as the womb continues daily to increase in size, its return to its natural situation must become more and more difficult: and further, when long confined to this unnatural situation, it will at length become swollen and inflamed, which must render every effort to replace it more painful and more difficult. Its presence is ascertained, when, on examination by the vagina, the internal orifice of the womb either cannot be felt at all, or is discovered high up under the pubes, but a large round tumour is discovered occupying the inferior parts of the cavity of the pelvis; and if at the same time a finger be introduced into the anus, the same tumour may be felt pressing the rectum to the hollow of the sacrum. If both these examinations be made at the same time, we may readily discover that the tumour is confined between the vagina and the rectum.

96. The prevention and cure are equally evident: the first consists in carefully attending to the call of nature, and on no occasion retaining the urine for any length of time; the latter, in emptying the bladder and rectum as soon as possible, which alone will remove all lesser degrees of this disease; and

without which, no other remedy can be of use. Repeated injections generally succeed in emptying the intestines; but to evacuate the bladder is, in this case, sometimes attended with more than common difficulty. If, therefore, the common attempts, in different attitudes, fail, early recourse must be had to the catheter; and if the introduction of the common silver catheter cannot be easily accomplished, a slender, long, and flexible catheter of elastic gum, must be procured: this instrument will accommodate itself to the confined passage, and be more easily introduced; (See Chap. iv. No. 24. plate xix.) and slow and cautious, but steady and unremitting efforts must be persisted in until we succeed; for, as has been already observed, until the bladder shall be empty, no relief can be given; and when this is completely effected, the womb will probably return to its natural situation by its own propensity to rise through the pelvis.

But although this would probably happen, if not immediately, in a day or two, and no danger is to be apprehended, as long as circumstances of pain and inflammation can be kept off, by an empty bladder, open bowels and occasional bleeding; still the woman is not to be left in circumstances of such anxious suspense, without some efforts towards her effectual relief. The urine, therefore, being drawn off, the bowels are likewise to be emptied, by repeated injections aided by some mild cathartic, such as castor-oil; and this being accomplished, and the woman kept in a horizontal posture, we may attempt to raise the fundus uteri above the brim of the pelvis, by two fingers introduced into the vagina. In this manner we shall frequently succeed; but if we fail, we may again attempt the reduction by placing the woman so as to rest on her elbows and knees, and then with two fingers of one hand intro-

duced into the rectum, push the fundus uteri upwards and forwards, whilst at the same time, with one or two of the other hand in the vagina, we attempt to bring the neck of the womb down from the pubes; or after the method recommended by Dr. Dewees, in a note to his edition of Baudelocque, viz. having* previously prepared the parts of the woman by anointing them well with lard, bleed her standing until she shall faint, then immediately laying her on her back, with her knees raised towards the abdomen, introduce your hand into the vagina, with the back of the hand towards the hollow of the sacrum, and push up the fundus until it is placed above the projection of the sacrum. But unless the parts of the woman are so much relaxed, as to admit of these methods without so much force or irritation, as to give much pain or to risk bringing on inflammation, neither should be attempted. It is better to wait the effects of time, than to risk the ill consequences of violence. The very growth of the womb, from which all danger has been apprehended, will rather contribute to its reduction; and when that has been found impossible at first, it has been accomplished with ease after a few days.

It will sometimes happen, however, from ignorance or neglect, that this disease may have proceeded to a degree not be relieved by these gentle means: the suppression of the urine is total, the bearing down and calls to stool violent, resembling the throes of labour; the tumour in the vagina is so low and large as to occupy the whole cavity of the pelvis, so as to admit the finger but a little way into the vagina, and these symptoms are attended with fever and inflammation. In this dangerous situation, the patient must first be plentifully bled; ease must then be procured by the free use of opium, (No. 14. a.) the bladder and rectum must be

emptied; relaxing bathes, and fomentations must be applied to the parts, and these remedies must be repeated and continued until all symptoms of fever and inflammation have subsided: after which, the efforts to replace the womb may be steadily but cautiously persisted in, remembering, however, that while the bladder and rectum can be kept empty, there is less danger in delay than in violence. After the reduction has been accomplished, it is always proper to keep the woman in a horizontal posture for some days, at the same time carefully attending to the state of the bladder and bowels, until the womb has risen out of the pelvis, and acquired such a size that the recurrence of the disease is improbable. •

97. *Epileptic fits.* The state of the womb has a great effect on the female constitution; and that greater degree of sensibility and irritability by which women are distinguished from men, receives great increase from conception, which is continued through every period of pregnancy and labour. Hence, at such times women are peculiarly subject to nervous, spasmodic, and convulsive diseases; and hence, too, women who are the inhabitants of populous cities, and in the higher spheres of life, who have been delicately bred, and who indulge themselves in a dissipated and luxurious life are much more liable to these dreadful and fatal diseases than the more hardy inhabitants of the country, or than such as from constant labour and exercise enjoy more robust constitutions.

Women are liable to convulsions in every period of pregnancy; seldom, however, in the early months, more frequently towards the latter end of pregnancy, and still more so at the commencement of labour, when the first dilatation of the extremely sensible os uteri seems to bring them on. They are

more apt to occur in a first, than in subsequent labours, from the great apprehension and terror which some women suffer on that occasion; and perhaps for a similar reason women, whose labour is brought on by some dangerous accident, some sudden stroke of affliction, who have suffered convulsions on a former occasion, and those unhappy women, who, instead of rejoicing in the birth of a child, dread consequent reproach more than the pain and danger, are particularly subject to convulsions.

98. The danger of convulsions is in general in proportion to the advanced state of pregnancy, except when they occur after labour pains have begun, when a speedy delivery frequently carries them off: in other respects the danger is to be estimated more from the health and constitution of the patient, from the violence of the fits, and from the degree of stupor and apoplectic symptoms by which they are succeeded, than from the frequency of their recurrence. When each succeeding fit is more violent, and when they leave the patient more and more comatose, the danger is most imminent.

99. They are frequently preceded by a very irritable and fretful state of mind, approaching to delirium; and by a restlessness and unaccountable uneasiness of body; by some degree of blindness, and the appearance of motes dancing before the eyes; by a swimming or violent pain of the head, especially on stooping down; by a flushed countenance, a staring and protruded eye, swelling of the veins of the neck and throbbing of the arteries of the head; and sometimes by a cramp, or violent pain in the stomach, which is always a dangerous symptom.

100. In addition to that increased irritability which always accompanies pregnancy, many of these symptoms indicate a general fulness of the

blood vessels, as well as a particular determination of the blood to the head, which threaten immediate danger, and call for speedy and vigorous remedies; and if early attention be paid to them, they will not only be relieved, but the more dangerous state of convulsions which they threaten, will, probably, be prevented: to this end, bleeding, copious in proportion to the strength and constitution of the patient, and repeated according to the necessity of the case, is the first and most important remedy; its good effects are to be promoted by purgative medicine, a low diet, and cooling drinks; and all cordials, wine, much exercise, and violent passions, carefully avoided. The same remedies are necessary after the fits have come on, only they must be applied with still greater vigour; the bleeding must be more copious, and if the blood be drawn from the jugular veins, or temporal artery, it will be most efficacious: at any rate, cupping glasses, with scarification, should be applied to the nape of the neck or temples; and the bleeding must be copious and repeated according to the violence of the symptoms and strength of the patient; and the effect of purgative remedies must be quickened by stimulating clysters, (No. 5. c. d.) Of the effects of emetics, blisters, and anodynes, some doubts have been entertained: but where there are evident marks of a loaded and disturbed stomach, after bleeding and purging, emetics are not only safe, but very efficacious; not only as preventives, but after the fits have come on. Blisters are certainly not to be relied on but as auxiliaries; and as such should be applied to the head, between the shoulders, or to the thighs. Of opium we have good reason to be apprehensive, except it be in that species of convulsion which sometimes comes on after great fatigue and exhaustion, by tedious labour; or con-

siderable loss of blood, in which anodynes, cordials, and nourishment are our only resource. Sudorifics, such as tepid drinks, saline draughts, and nauseating doses of antimonials, (No. 12. a. c. d.) where there is an opportunity afforded for their exhibition, are always safe, and may be of use: their effects may be promoted by fomentations to the legs and abdomen, and on some occasions the warm bath has been found to suspend the attack. For the treatment of convulsions during labour, see chap. iv.

101. *Paralytic affections* are more rare, but sometimes occur during pregnancy. In this case they seem to depend solely upon the state of the womb, and are seldom cured before delivery, but then, or very soon after, leave the patient perfectly free. Heating and stimulating remedies increase the complaint; but, like all other diseases depending on uterine irritation, they are relieved by moderate bleeding, gentle purging, and a cooling regimen.

102. *Fluor albus*, the whites, is a disease to which pregnant women are frequently liable, and when it occurs late, and is not very profuse, it requires no remedy except cleanliness, by washing frequently with cold water. Delivery, which it may contribute to render easy, generally cures it. But when it is profuse, especially at the beginning of pregnancy, it is apt to bring on pains in the back and loins, and to weaken and relax the woman so much, as to endanger a miscarriage. In this case, as well as in the unimpregnated state, it is cured by washing freely with cold water, or by bathing the whole person in cold water; by moderate exercise in the open air, by a plain but nourishing diet, by strengthening remedies, such as the Peruvian bark and iron, (No. 16. c. e.) by astringent injections, (No. 20. a. b. c. d. e.) beginning always with such as are weak, and

after a little time, changing them for such as are more powerful.

When fluor albus is attended by feverish heat, bleeding moderately, and purgatives, should precede astringents; and when the discharge is of a dark yellow or greenish colour, sharp and acrid, so as to inflame and irritate the neighbouring parts, simple washing, and mild alterative medicines, such as mild mercurials, and the decoction of the woods, (No. 13. c. d.) should be used for one or two weeks, and then succeeded by strengthening and astringent remedies. When in an unimpregnated state, fluor albus is accompanied by a regular and periodical flow of the menses, the discharge most probably comes from the vagina, is generally a slight disease, and easily cured. But when under this discharge the menses are obstructed, or they flow profusely and irregularly, accompanied by pain in the back and loins, it is to be apprehended that the womb is diseased; the complaint becomes more serious, and generally renders the woman barren, as long as the discharge continues.

SECTION III.

Abortion: miscarriage before the end of the sixth month.

103. This is a subject of great intricacy, and, at the same time, is very interesting. It happens frequently, and deprives women of their health and their happiness. Very strong and very weak women

are most prone to it; but the numbers of the strong bear no proportion to those who are of delicate constitutions; the numbers of active country women, to the more indolent and inactive inhabitants of cities; the number of women of good sense, and calm and steady minds, to the weak, the irritable, and the passionate: and hence a most important lesson, that good health, and a good education are the best preventives; and that it in a great degree depends upon mothers, and the care they take in rearing their girls, to lessen this great and common evil.

Another observation is, that women who have once miscarried, are apt to miscarry again at the same period, from the same causes, and with the same symptoms; and that if the habit be once acquired, it becomes very difficult to remove; ruining the health of women, and disappointing the hopes of parents. Hence the importance of great care in young women, not to miscarry in their first pregnancy; and a useful lesson to practitioners of midwifery, in their treatment of threatened or pending miscarriages, to inquire diligently into the causes, periods, and symptoms of preceding cases in the same patient, whence they may draw the most useful indications of prevention and cure.

Again, miscarriages are most apt to occur between the eighth and the twelfth week, and from the fifth to the seventh month; these periods, therefore, will require particular attention; though, indeed a prudent care is at all times necessary, because the cause and source of the miscarriage may be, and commonly is, laid at a much earlier period than that at which it occurs.

104. *The causes of abortion* may be reduced to the death of the foetus, a separation of the ovum

from the womb, the cessation of the healthy action, and the accession of the muscular contraction of the womb.

That the foetus may die independently of any disease of the mother cannot be doubted, and has been proved by many cases in which a healthy mother has miscarried of an embryo or foetus with marks of evident disease ; or of a size which proves it to have died many weeks before the miscarriage took place.

105. A detachment of the ovum is by far the most frequent source of miscarriage, and from the extreme delicacy, and tender structure of the arteries and veins by which the ovum is connected with the womb especially in the early months, is most apt to occur from slight causes : hence, far the greater number of miscarriages happen between the eighth and sixteenth week of pregnancy. Yet the cause may be laid much earlier, and may commence in the rupture of a very few, or even of a single vessel, pouring out a little blood between the uterus and decidua, or between the uterus and placenta, and gradually detaching the one from the other, until so much is detached as to occasion the death of the foetus, or so much uneasiness and pain, as to bring on the muscular contractions of the womb. This cause of miscarriage cannot be detected before labour, and is proved only by the expulsion of a quantity of coagulated blood, immediately before or after the expulsion of the ovum. The cause of this detachment may be general plethora, or any circumstance which may excite too strong and vigorous an action of the heart and arteries, and is frequently the source of miscarriage in young women lately married, who, abandoning themselves to the joy and happiness of their present circumstances, too often are careless and inattentive

to their general health, and particular situation. In such, the cause of the miscarriage is frequently laid within two or three weeks after marriage, or after the first cessation of the menses: and should suggest particular caution at that time, to avoid any violent exercise, severe fatigue, awkward postures, sudden exertion or shocks to the body, heating and stimulating food, a costive habit, and violent passions; and points out, in full habits, the propriety of moderate bleeding, open bowels, and temperance both in exercise and food, in the early months of pregnancy. On the other hand, a weak frame, all depressing passions, particularly grief and fear, an indolent life, luxurious habits, late hours, both in bed and in company, diarrhœa, fluor albus, or any other debilitating disease, may, by weakening the already weak attachment of the ovum to the womb, subject women to great danger of miscarriage from this cause.

106. *The cessation of the action of gestation, and the accession of the muscular contraction of the womb.* The healthy action of the womb, by which it grows during pregnancy, so as to be at all times full, but never put on the stretch, and by which it performs its functions, of supplying the ovum with nourishment, should continue throughout the whole period of pregnancy; but is liable to be disturbed, and to cease prematurely, not only from the death of the fœtus and separation of the ovum, but from many circumstances of disease of the mother, such as actual weakness, and all circumstances which occasion or increase it, especially when accompanied by an increased and peculiar irritability, marked by an impatience of mind, and restlessness of body, unconquerable timidity, anxious solicitude, and unreasonable fretfulness; which are always increased by pregnancy, and require the exertion of much

good temper, prudence and discretion in the friends, and no common fortitude and good sense in the patient to regulate and subdue. Severe pain in a neighbouring part, such as arises from a stone or dysentery, occasioning violent tenesmus in the bladder or rectum, obstinate costiveness, and accumulated fæces, bringing on violent efforts to stool, may change the healthy into a morbid action of the uterus: nay, even obesity, and a remarkably good state of health, in which the other parts of the system make such demands upon the heart and arteries, as to deprive the womb of that increased energy necessary at this time to the performance of its functions, may so far diminish its healthy action, as to bring on its expulsive efforts: hence, such women as grow thin, and are somewhat emaciated during pregnancy, are observed to be little subject to miscarriage, but generally go on happily to their full time, and bring stout and healthy children. But the most frequent cause of morbid action, and premature contraction of the uterus, is frequent miscarriage; by which the womb acquires a disposition, and, as it were, a habit, of contracting at a particular period, almost as regularly as it naturally does at the end of nine months; and in some women this disposition to morbid action, and miscarriage, at a particular period of pregnancy occurs, without our being able to assign for it any cause whatsoever; but in them it appears to be the natural term of their pregnancy.

107. The signs of approaching miscarriage, are absence of the morning sickness, subsidence of the breasts, a discharge of blood or of water from the vagina, and regular labour pains.

The absence of the morning sickness, and the subsidence of the breasts, both denote the death of the fœtus. On these occasions the sickness ceases suddenly; and the fœtus, which is discharged by

the miscarriage which follows, generally shows marks of previous disease. The breasts subside when the constitution is deprived of those energies which the living foetus excites. A coldness of the abdomen, and a cessation of motion after quickening, are likewise said to denote the death of the foetus; but both are very equivocal evidence of that event; and many women have produced healthy children, when from these symptoms they have been supposed dead for some time. It is evident, that in case of the actual death of the foetus, we have only to wait patiently for its expulsion. Yet, the woman is not to abandon herself to a careless conduct: in the first place, because she may be mistaken; and, secondly, because the delivery will always be easier and safer when left to nature, than when any how precipitated.

108. *A discharge of blood from the womb*, although a very frequent, and generally the most important symptom, is not necessarily followed by miscarriage. Some women suffer a discharge of blood, both in quantity and in other circumstances, resembling menstruation, for one or two periods after conception, with no interruption to the regular progress of their pregnancy; but such discharge does not come from the cavity of the womb, nor follow after any accident, and is never attended by labour pains; and a small discharge of blood, although the consequence of accident, and probably arising from a partial separation of the after-birth, may cease; the bleeding vessels may be plugged up by coagula, and the woman may, with great caution, be conducted to her full time.

Such hæmorrhages as occur before the expiration of the sixth month, are seldom or never attended with any danger to the mother; but the tender embryo is generally destroyed by them. After the

sixth month, the child more frequently escapes, but the mother is brought into more danger. When labour pains precede the discharge, abortion can seldom be prevented; when they follow, it sometimes may; but even when we despair of preventing the abortion, the necessary means to check and restrain the hæmorrhage, should be industriously pursued; by which we may save the patient the loss of much blood, and lessen the weakness and disease which necessarily follow.

109. Whenever hæmorrhage occurs before the fifth or sixth month of pregnancy, the first remedy is blood-letting, which should be as early as possible, and copious in proportion to the strength of the patient; and in this way, it will probably save the patient the loss of more blood: as it is unquestionable, that one copious bleeding will do more in stopping hæmorrhage, than taking away double, or three times the quantity of blood at several intervals. The bowels should be immediately opened by salts, and kept open by small doses, repeated daily, and the woman must be confined as much as possible to a horizontal posture, and absolute rest.

110. Every thing that will heat the body and quicken the pulse, must be carefully avoided: for this reason, the bed should be hard and the covering light; cold air should be freely admitted into the chamber; all cordials, spiritous liquors, spices, and stimulating food, must be rejected; the diet must consist wholly of vegetables, fruit, milk, butter-milk, cold water, lemonade, small-beer, ice, and iced creams when they can be procured. The saline draughts, (No. 12. a. c.) may be given every four or six hours, and five or six drops of laudanum may be added to each, but large doses of laudanum should be avoided.

111. Cloths wrung out of cold water or cold vine-

gar, should be applied to the back, bowels, thighs, and to the external parts. When the heat of the body, as well as the hæmorrhage, are very considerable, the cold of these applications may be increased by ice or snow, which on many occasions, have been introduced into the vagina with great advantage. These cold applications, however, should never be continued so long as to occasion pain, or bring on an uninterrupted chill; but after using them some time, a piece of sponge or lint, dipped in cold port wine, vinegar, or brandy, in which alum has been dissolved, may be introduced high up into the vagina, and at the same time, a compress should be applied firmly over the external orifice; or, as recommended by Baudelocque and Burns, the vagina may be first stuffed with tow or old linen. Cold astringent liquors, such as a decoction of oak bark, (No. 20. b.) or a solution of alum, (No. 20. c.) may be injected into the vagina, and are frequently found effectual, especially in small discharges, which come on in the early months, without any evident cause, or from slight accidents, and which are unattended with pain; which, although not immediately threatening, if neglected, increase as the womb increases, and if allowed to continue, seldom fail, at length, to bring on miscarriage. But in more considerable hæmorrhages, injections are of less use, being immediately washed out of the vagina by the gushing blood: and when that has begun to abate, they become dangerous by disturbing the coagula, which begin to be formed, and by which the hæmorrhage will be most effectually restrained. The internal use of astringents, which at one time were much relied on for restraining hæmorrhage, were again in a great measure laid aside, from an opinion that their effects as astringents could not be propa-

gated beyond the stomach and intestines; and only the mineral acids combined with some mild vegetable astringents, such as rose leaves and oak bark were retained, rather as agreeable tonic drinks than from any good opinion of their styptic quality. But of late years some respectable physicians have ventured on the use of powerful mineral astringents, such as the sulphats of zinc and copper, (white vitriol and Roman vitriol) and the acetate of lead; and their effects are said to have proved so considerable and salutary, as to recommend their use. Hoffman and Freind were among the first who recommended, and Dr. Dewees, of Philadelphia, is one of the most strenuous advocates for, the internal use of the sugar of lead, which, he assures us, he has repeatedly given in doses of from two or three, to even ten grains, in uterine hæmorrhage, with very great and immediate effect; and that it may be with safety repeated at short intervals until the hæmorrhage shall be restrained. This practice I am informed has been followed by many gentlemen in this country with success; and I find it sanctioned by Mr. John Burns, of Glasgow, and Dr. Denman, who, although he does not speak of it as a remedy of which he has had much experience, still allows the sugar of lead, as well as the oil of turpentine, to be powerful medicines in hæmorrhage. So that, although I confess I have no experience of these remedies myself, still, on such authority, I do not hesitate to recommend them. With regard to the zinc and copper, their use must be very limited, from their strong effect as emetics; and as it respects the sugar of lead, I cannot omit to advise the exhibition of castor oil, as soon as it may safely be done, in sufficient dose to open the bowels, and to guard against the ill effects which lead is known to have upon the bowels and nervous system.

112. *Fainting* is not only a common consequence of the loss of much blood; but it is really the remedy which nature makes use of to check it; although, therefore, very alarming to persons unacquainted with its good effects, it should not be interfered with; particularly when it first comes on, no efforts should be made to rouse the patient by volatiles, or to prevent its recurrence by cordials; but she should be left in that languid state which accompanies it; during which, the blood moves slowly through the vessels, and an opportunity is afforded for the mouths of the bleeding vessels to contract, and to be plugged up by coagula. At the same time, if labour be already commenced, the contraction of the womb goes on: for the womb acts during faintness, and even after death: and nothing lessens the size of the bleeding vessels so much as this contraction. Whenever, therefore, this is observed during uterine hæmorrhage, we may expect as far as the mother is concerned, a favourable termination. Taking the hint from nature, we sometimes imitate the effects of fainting in hæmorrhage, by such remedies as bring on nausea and sickness. This is one motive for bleeding; and whenever a vein is opened with this intention, the patient should sit up, that the faintness may come on with the loss of as little blood as possible. With the same intention, small doses of nitre, but particularly of ipecacuanha, are not only safe, but have been found very effectual; and although in this case vomiting is not wished, no danger is to be apprehended from it when moderate. Since the effects of the digitalis upon the pulse have been known, it has likewise been recommended in all active hæmorrhages, to lessen the force and rapidity of the circulation, which it accomplishes in a most surprising manner. In cases, however, of uterine

hæmorrhage, attended with great weakness, I should administer it with great hesitation, lest the extreme languor and debility which it is apt to produce, should add to, instead of lessening the danger of my patient. The tincture is the safest form in which it can be used. When sufficient time has been allowed for the contraction of the blood vessels, and the formation of coagula, if the fainting still continue to an alarming degree, dash cold water on the face, give a glass of wine, or any of the cordials mentioned under No. 17. A great degree of restlessness and anxiety, with a heavy deep sighing, are more immediately alarming after hæmorrhage than fainting; but they seldom or never occur in early pregnancy.

113. In some cases of early miscarriage, the discharge of blood will be kept up by the ovum sticking in the neck of the womb, after it has been thrown off from its surface: introducing one or two fingers into the vagina, and moving it from side to side, will frequently disengage it, and put an end to the complaint. In periods more advanced, from the fourth to the end of the sixth month, the foetus is generally more easily expelled; but the secundines are apt to be retained: such efforts as have just been described, may here be made; or by irritating the internal orifice a little, and at the same time rubbing the abdomen with the hand, the womb may be excited to throw it off by more vigorous contractions, but nothing more should be done; and if these efforts fail, the cure must be left to nature, although, as it frequently does, it may require considerable time: several weeks or a month may pass, before it will come away. The evacuation is sometimes brought on by pressure at stool, and it has been recommended to occasion stools by stimulating saline clysters; but we must be governed by

the effects these have in increasing the hæmorrhage. In all these cases, the uterine discharges are apt to become very offensive, which must be remedied as far as possible by great cleanliness, and by antiseptic and astringent injections, (No. 20. a.)

114. It is allowed, that a discharge of water from the womb, occasioned by a rupture of the membranes of the ovum, is necessarily followed, in a short time, by delivery; but every watery discharge from the vagina is not a discharge of the liquor amnii, or that fluid which is contained within the membranes. Sometimes the glands about the neck of the womb secrete so thin a fluid, as to resemble the liquor amnii: this is discharged at short intervals, or oozes continually for several weeks before delivery. In these cases, the neck of the womb is much relaxed, and the mucus by which the orifice is sealed up is dissolved or discharged. It becomes, therefore, very necessary that the woman keep herself perfectly quiet, and as much as possible in a recumbent posture, for fear of breaking the membranes. And if the complaint come on long before the expiration of the reckoning, she should use some mild astringent injection, (No. 20. a. b. c.) by which the relaxed glands may be strengthened and the discharge checked, so that she may go on to her full time with less danger.

115. *Labour pains.* Whenever, at any period of pregnancy, the womb has really begun to act, and such action is manifested by regular pains in the back and loins, attended with pressing down and relaxation of the internal orifice, it is hardly possible to prevent miscarriage: such action may be suspended, and the miscarriage thereby retarded; but the action of the womb almost surely returns, and expulsion sooner or later takes place. Warning, indeed, is sometimes given by uneasiness in the

region of the womb, and pains in the belly, accompanied by some pressing down from the action of the abdominal muscles; and all hope is centred in preventing those from bringing on true pains: the necessary remedies, therefore, must be applied early, or they will have no effect.

116. If the woman be of a full habit, let her be immediately bled, and if costive, let her bowels be emptied by an injection; after which, give a full dose of laudanum, or rather an anodyne clyster of eighty or one hundred drops; and let these be repeated, in doses of one quarter or one third, every hour or every half hour, until the pain shall be suppressed, or in case it should return. This treatment is particularly proper when any sudden passion has contributed to bring on pain: a calm mind and absolute rest, are essential to its efficacy; and when the alarm has been great, the anodynes should even precede the evacuations. This treatment is likewise particularly proper, when slight discharges of blood, brought on by accident, begin to be attended with pain; or even when given with a view to prevent the accession of pain. But after the action of the womb has really begun, opium, except as a palliative to gain time, can be of no use: and it should always be well considered how far we may not protract the cure, when we cannot prevent the miscarriage.

117. *Habitual miscarriage.* It has already been observed, that women may acquire a habit of miscarrying at particular periods of pregnancy. Some few women, too, fall into labour as regularly at the end of seven or eight months, as the generality of women do at the end of nine, without our being able to assign any reason for it; except, that in such cases, the child is generally born dead. It would be happy, if we had it in our power to point

out the immediate causes of these unfortunate habits, so as to lead to effectual remedies ; but all we can do, after directing the patient carefully to avoid those accidents to which the first miscarriage may fairly be attributed, is to endeavour to correct such defects of general health as they seem to be connected with.

118. When, therefore, women of *good health but plethoric constitutions, and subject to copious menstruation*, fall into a habit of miscarrying, let them be confined to a vegetable diet, and drink only water : let them use constant exercise, sleep but little, on a hard bed ; and keep their bowels freely open, by the daily use of Glauber's salts. When, on the contrary, *a copious menstruation is connected with a plethoric but a lax habit*, as is the case with many fat women, the diet should indeed be light, and consist chiefly of vegetables ; but some animal food may be allowed, and a little port-wine or claret may be mixed with their drink : the exercise should be gradually increased, but should never go to the length of fatigue ; and after conception, must be used with caution ; sea-bathing and the shower-bath, are both very beneficial : and in case of pains in the back, to which such women are very subject, applying to it cloths wet with cold water, dashing with cold water, and injecting cold water into the vagina, are useful. After conception, the diet should still be sparing, and the cold bath should be persisted in ; and if at any time the pulse become remarkably full and throbbing, a little blood should be taken from the arm. When *good health is connected with a sparing menstruation*, a vegetable diet, moderate exercise, the daily use of the warm bath, and drinking a pint of tepid water morning and evening, may be recommended. And *when a sparing*

menstruation is connected with a weakly and delicate constitution, animal food, some wine and bitter purgatives, (No. 10. a. b. or c.) so as to keep the bowels open, are indicated; the warm bath may be occasionally used, but not with so much freedom as under better health; and in its place, warm water with a little salt, may be injected into the vagina two or three times a day. In both these last constitutions, the warm bath and aloetic medicines should be discontinued after conception; and in all cases of habitual miscarriage, women should live separate from their husbands, until their general health shall be restored, as well as for several months after conception.

The case of habitual abortion most difficult to be remedied, is that in which *women of good health fall into labour regularly about the seventh or eighth month of pregnancy, and are then delivered of dead children, or such as are manifestly diseased, and in which this disease of the infant cannot be traced to any disease of the parent, communicated to it.* Such women are observed to suffer very little or not at all from the common symptoms of early pregnancy; and from the observation, that the sickness of the mother is somehow connected with the health of the foetus, it is recommended to weaken the action of the stomach by small doses of tartar-emetic, taken at such long intervals, as to bring on some nausea and sickness, but not to occasion very active vomiting. This may be repeated occasionally, as long as the natural sickness is observed to continue; the diet should be spare, the exercise moderate, the woman should be occasionally bled, and she may use the cold or the warm bath, as the circumstances of her general health may indicate. In some cases of frequent recurrence of miscarriage at particular

periods, long confinement to a horizontal posture, and a spare diet, have been found successful. It is hardly necessary to add again, that women should be particularly careful in a succeeding pregnancy, a little before and after the period of a former abortion. On this subject, the student will consult with advantage an essay of Mr. John Burns, of Glasgow.

CHAPTER III.

NATURAL LABOUR.



SECTION I.

The approach of Natural Labour.

119. WE are told, that among the Indian nations of this country, a woman finding her labour approach, retires alone to some secluded spot, and there, without assistance, remains until she be delivered; when, having washed her infant, and bathed herself in the next stream, she returns to her cabin and her usual occupations. The same is said to be the practice of the natives of Abyssinia, and some other parts of Africa, and of those of the West-Indian islands; and that in all those countries, few women are known to suffer any ill consequences from labour, or to die undelivered: and Brydon tells us something very like of the ladies of Sicily. Although, therefore, we make full allowance for some exaggeration in these accounts, and that it must be confessed, women in general, especially in a state of society, endure more pain, are exposed to greater difficulties, and meet with more accidents from labour, than any other animal; yet we have reason to believe, that much of this is owing to mis-

conduct; that beneficent Providence has endued woman as well as other animals with powers, which, when unimpaired, are equal to all her natural functions; and that we may fairly conclude, *that the frequent interference of art, in so essential and natural a process as labour, cannot be necessary.*

120. The first rule, therefore, to be laid down for the guidance of a midwife, is, *that she is never to interfere in the natural progress of labour, unless where some untoward circumstance or obstacle, too frequently the effect of precipitancy and early mismanagement, disturb and put nature out of her course; and that the most essential knowledge which a midwife can obtain, is that of every symptom which marks the progress of a natural labour when unassisted, or rather when undisturbed by art; of the manner in which they succeed each other; and of the uses and effects of those symptoms which precede, in preparing the parts concerned, for those which are to follow.* For “natural labour is, through its whole progress, a single process, in which every preceding symptom is absolutely necessary for the due accomplishment of that which is to follow.”—(Denman.) Hence the great danger and certain mischief of unnecessary and preposterous interference; by which nature cannot be aided, but may most materially be interrupted in her work. Indeed, this observation may justly be extended to the whole period of pregnancy; and perhaps is the only just ground on which we can account for the greater facility and safety, with which the women of rude and unpolished nations in general, pass through pregnancy and labour, than women in civil society, especially in the higher ranks of life; the unnatural forms, restraints, and habits of which, in many ways interfere with this great work.

121. Sometimes, a few days, at others, two or three weeks before the accomplishment of her reckoning, a woman begins to feel the symptoms of her approaching labour. She becomes anxious and apprehensive of the event, busies herself for the reception and accomodation of her infant, moves with difficulty, and frequently complains of restlessness and pains in her back and loins. As the period approaches, her belly subsides, and most in the most favourable cases; she is liable sometimes to a strangury or suppression, but more frequently to an incontinence of urine. Sometimes a lax comes on, but generally she is rather costive, and she perceives a discharge of mucus frequently tinged with blood, from the vagina.

The anxiety, restlessness, and uneasiness of this period, prompt many women to wish it over; and some are so imprudent as to attempt to shorten it by rough exercise, such as riding in an uneasy carriage, or some such means, with a view to bring on their labour; but no conduct can be more faulty or absurd; at any rate, they increase the present uneasiness; and should they succeed in their attempts to precipitate their labour before nature is properly prepared for it, they will unquestionably render it more tedious, more painful, and more difficult. On the contrary, let them, according to the indications of nature, and in imitation of all other animals, give themselves more rest than usual, attend carefully to the state of their bowels, keep them freely open; and if the woman be of a strong and full habit, flushed and heated, it will be proper to lose a little blood.

122. The subsidence of the belly is a favourable symptom, and shows that the womb has not only begun to act, but is prepared to act in a proper manner; the discharge from the vagina, shows that

the parts are prepared to dilate; the strangury is owing to the pressure of the child's head upon the neck of the bladder; the incontinence of urine to the same pressure on the fundus or body of the bladder; and hence, both are favourable symptoms, and indicate a natural presentation of the child. The incontinence is attended with no pain, and admits of no remedy until the cause be removed by delivery; but the strangury is always painful, and may, by neglect, become dangerous: the woman is, therefore, to be directed frequently to attempt to discharge her urine; to try in various postures, and if she fail, and the suppression become complete, she must be relieved by the catheter, (Chap. I. No. 27.) for by delay, the difficulty of relief will be increased, the pain and distention of the bladder will interfere with labour, and by over distention, the bladder may lose its power of contraction, or even burst. A moderate lax is always favourable, and should not be interfered with; if profuse, a few drops of laudanum will generally check it. But costiveness is not only distressing for the present, increasing heat, restlessness and pain; but may become very inconvenient during labour. If, therefore, a pregnant woman has neglected to pay attention to this circumstance before, she must now take care to remove it by some mild laxative, or rather by repeated injections, which is the best mode at this late period, when all active medicines are improper.

123. *False pains* frequently resemble true labour pains so exactly, as to be mistaken for them; particularly by young women with their first child; so as to induce them to send for assistance; but they are carefully to be distinguished from true labour, or the mistake may lead to much mismanagement and error. Let the midwife therefore on her arrival,

first inquire into the state of the bowels, and in case of costiveness, remove it by an injection; if the woman be strong, flushed, with a full pulse and a hot skin, she should lose a little blood; but this evacuation must not needlessly be had recourse to. Let the patient seek rest in a horizontal posture, and promote moisture on her skin by frequent draughts of weak teas: by such means, all false pains will generally be removed.

124. There is, however, no absolute criterion, by which false pains can certainly be distinguished from true labour pains; but by examining by the touch the effect which the pains have upon the internal orifice of the womb. By this operation we judge of the size of the pelvis, and its deformities: we discover pregnancy, its different periods, and the approach of labour; we distinguish true pains, from such as are false; we discover the presentation of the child, and form an opinion of the progress and probable termination of the labour. To perform it with address, and to draw from it certain conclusions in intricate cases, can be acquired only by attentive practice and long experience: but to enable a young practitioner to judge hence, of the progress, and to direct him in the conduct of natural labour, a few plain directions will suffice. And, first, it is never to be proposed but in expectation of obtaining from it some important information, nor unnecessarily repeated; and must always be performed with as much delicacy as possible. The patient should lay on her left side, on the edge of the bed, with her knees drawn up and a small pillow between them; and if she be not already in bed, a light covering should be thrown over her. The accoucheur sitting behind, the fore-finger of the right hand, first anointed with a little soft pomatum or oil, is to be cautiously introduced into the

vagina, carefully avoiding all hurry and rudeness by which the parts may be irritated: and, above all things, taking care to run no risk of bursting the membranes in case the internal orifice should be found more open, and the membranes more on the stretch than was expected. The finger will probably first reach the neck of the womb, now perfectly distended, and pressing somewhat down into the vagina; and passing over that towards the sacrum the os tincæ will generally be found, in the beginning of labour, pretty far back and rather high up; in very different states, in different women, and in different labours of the same woman; in some, long, hard, and irregular; in others, thick, soft, and smooth; in most, shortened to a thick ring, a little open and beginning to discharge a thick mucus; in some few, worn quite away, although still close shut. The examination is to be commenced at the beginning of a pain; first, because then the woman submits to it more readily, and, secondly, that the effect of the pain upon the internal orifice may be noticed: and it is to be continued until the pain ceases, so that we may judge of the effect it has produced. If the os internum be pressed down, tense, and begin to dilate during the pain, if this general tension relax during the intermission, and especially if these parts remain soft and slippery, and a thick mucus, with or without some tinge of blood, begin to ooze from it, we conclude the labour to be actually begun: but if, on the contrary, we discover no extraordinary pressure during the pain, and the internal orifice be not affected by it, we may be certain that the present pains are false, that labour has not yet begun, and that it cannot be promoted by them: and, therefore, if after proper evacuations they still continue, they should be suppressed by a moderate anodyne. After such a call,

however, the accoucheur should always be so far attentive as to let it be known where he may be found, as he may expect within eight or ten days to be called to his patient in real labour.

SECTION II.

Definition and Division of Natural Labour.

125. Natural labour is defined to be such as is regular in its progress, accomplished by the unassisted efforts of nature, and completed within twenty-four hours. But my plan of giving advice to midwives, makes it necessary to assume a wider range, and to consider all labours natural, in which the head of the child presents, and which are completed, though in a longer time, by the efforts of nature; without the introduction of the hand into the womb, or the use of instruments.

It will be convenient to divide the progress of labour into four stages. The first is occupied in opening and dilating the internal orifice of the womb; the second in the passage of the child's head through the bones; the third in dilating the external orifice, and the delivery of the child; and the last in the delivery of the placenta, or the after-birth. The first stage commences with true labour pains, and ends when the internal orifice of the womb is completely dilated; about which time, the membranes commonly break, and the waters are discharged. The second stage continues from the perfect dilatation of the internal orifice of the womb,

until the child's head has passed the brim of the pelvis, (plate I. II. III.) and descended so low as to press on, and begin to dilate, the soft parts. The third stage of labour now commences, until the soft parts, being stretched and distended into the form of a large protuberant tumour, the external orifice is so far dilated, as to suffer the head and body of the child to pass through it. The last stage is taken up in the care of the infant, in tying and cutting the navel string, and in receiving or gently aiding the delivery of the after-birth.

It is very important, that the midwife should keep this division of labour into four distinct periods, constantly in her mind, and perfectly understand what is going on during each; by which she will avoid all unnecessary hurry and confusion: she will expect no more at any one period than is intended by nature to be then performed, and will patiently wait for its accomplishment; and particularly she will see the impropriety, folly and danger of attempting, by any preposterous efforts of her own, to assist or hasten the accomplishment of any one of these periods; by which she can only interrupt nature in her present operations, and will surely render that period which is to follow, more painful, difficult, and dangerous; for "every regular symptom of labour performs a double office; it not only accomplishes a present object, but it prepares the parts which are next to be concerned, for the more easy accomplishment of what is to follow."—(Denman.)

First Stage of Labour.

126. The first stage of natural labour, which is occupied in opening and dilating the internal orifice of the womb, generally commences with pain in the

loins and back, stretching from thence across the abdomen to the pubes, or forepart of the belly, and ending on the upper part of the thighs. It soon leaves the woman free, and returns again periodical-ly, at longer or shorter intervals. These pains at first are slight, and return after long intervals; but soon the intervals grow shorter, and the pain becomes exceedingly sharp and cutting; at which time, the mucous discharge from the vagina is generally discoloured by some blood; after which, the very sharp and cutting sensation of the pains commonly abates; although, on the whole, the pains grow stronger, return at shorter intervals, and the nixus or pressing down increases.

If an examination be made at this period, (which should be very seldom, and always with the greatest caution for fear of breaking the membranes) this variety in the sharpness and severity of the pains, will be found to be connected with the situation, and to depend upon the state of the os tincæ: at first it is found high up, with edges more thick and rigid, and the opening small and hardly perceptible; as the pains continue, the internal orifice descends and comes forward in the vagina, the edges grow thin and soft, the opening enlarges, and after some time will admit the end of the finger; a small bag is then felt within, which, during the pain, tightens and is distended, but as the pain remits becomes loose and flaccid: as the internal orifice enlarges, this bag passes through, and assists in dilating it, until the thick edges of the orifice being entirely obliterated, the membranous bag, no longer supported by them, gives way, and the waters are discharged. Sickness and vomiting are frequent and salutary symptoms of this stage of labour: the pausea contributes to the relaxation of the whole

system, and the retching adds somewhat to the dilating effects of the pains.

The duration of this first stage is very different in different women, and in the same woman in different labours; but in general, it requires more time with the first child than with those which follow; and in well-formed women, commonly takes up more time than any other stage of labour: in this respect, however, there is so great variety, that it is in vain to attempt to assign any time to the duration of a natural labour, or of any of its stages. Some women are delivered in their sleep, in the room in which they are first seized, without being able to get to their beds, or whilst on a visit, without having time allowed them to return home; whilst others require many hours, and some several days, for the safe and happy accomplishment of a labour perfectly natural. And in the same woman, there is now and then almost as great variety in the duration of different labours.

127. The first observation I shall make on this stage of labour is, *that no skill or art of the midwife, no exertion of the woman, can in the least contribute either to lessen the severity of the pains, or to shorten their duration.* They are intended by nature to accomplish a necessary and important object, the complete dilatation of the internal orifice of the womb; which, from a rigid ring of some considerable thickness, and generally close shut, is to be softened, relaxed, and worn away until it is absolutely obliterated; and so astonishingly enlarged, as to permit the child to pass through. Hence we learn the reason, why more time and pain are required to open the orifice of the womb, the breadth of half a crown, than to obtain all the rest of the dilatation necessary for the delivery; a fact which young practitioners should constantly recollect.

when forming an opinion on the probable duration of labour; that on the one hand, they may not fatigue their patient by occasioning unnecessary efforts in the beginning of labour; nor expose her to the hazard of being delivered alone towards its conclusion: and hence we see the cause of the pains being more severe, cutting, and grinding at the beginning, than towards the latter end of this first stage. Whilst the lips of the internal orifice are thick and rigid, they make great resistance, and are in some measure torn asunder by the force of the pains; but they continually grow thinner, are more and more relaxed and softened, make less resistance, and are more easily distended.

128. But although the midwife, during this stage, can neither lessen her patient's pain, nor shorten its duration; and although she is absolutely forbid interfering in any manner with the progress of the labour, her presence now, so far from being useless, is very necessary. As soon as she arrives, she should again inquire into the state of the patient's bowels, and unless perfectly free, empty them by an injection: indeed, whenever there is time for it, it is a good rule always to do this; as by its emollient as well as evacuating effects, the injection has a tendency in all respects to promote and render labour easy; and is particularly necessary and useful in the case of a first child. The midwife must likewise pay attention to the evacuation of urine, direct her patient to discharge it frequently, and if she fail in one to try another posture, sitting over warm water, or lying on either side, on her back with her hips raised; on her knees with her head low; and should all these efforts fail, she may by introducing a finger under the pubes during the remissions of pain, endeavour to raise the child's head a little from its pressure on the neck of the bladder.

If, notwithstanding these efforts, a total suppression should take place, she must be relieved early in the labour by the catheter, (Chap. 1. 27.) for as the labour advances, the difficulty of discharging the urine will increase; the pain of the distended bladder may become so great as to intercept and suspend those of labour; and the bladder being over distended, may lose its power of contracting ever after; it may inflame and bring on fever, convulsions and death: such are the evils which may follow a little neglect.

After these attentions, the labour is to be suffered to go on without any interference: the pains continuing, gradually open the internal orifice of the womb, and force the membranes through it in form of a purse, which acting as a soft wedge, contribute in the easiest way to its further dilatation. Of this the midwife may now and then assure herself by examination, but as seldom as possible, taking special care not to fret and irritate the parts by too frequent repetition; and always with the greatest gentleness and caution, and during the remission of the pains; lest the membranes should be burst, and the water let out before the internal orifice be fully dilated; an accident which always protracts labour, and renders it more painful and difficult. Another argument against frequent and unnecessary examination, is, that it has a tendency to remove the natural mucus already secreted, and to inflame the tender lining of the vagina, so as to check the further secretion of this salutary discharge; which is intended by nature to lubricate and soften all the parts to be distended in the course of the labour.

129. But if it be necessary to be thus cautious in respect of a careful and occasional examination, what terms shall I use to condemn, as it deserves,

the abominable practice of boring, scooping, and stretching the soft parts of the mother; under the preposterous idea of making room for the child to pass. It is impossible to censure this idle, indecent, and dangerous practice too severely: it is always wrong, nor can there be any one period in any labour the most easy and natural, the most tedious and difficult, the most regular or preternatural, in which it can be of the least use; in which it will not unavoidably do great mischief. It will render an easy labour painful; that which would be short, tedious; and one which, if left to nature, would terminate happily, highly dangerous. I know that I have to combat the prejudices of many of my country-women on this subject; and that, although I may convince the judgment of a sensible midwife, she will not always be suffered to exercise it, unless she has some firmness and self-possession, to resist the solicitations and importunities of her patient, and her mistaken friends. She will not only be importuned on some occasions of a little delay, she will be reproached with permitting her patient to suffer without assistance; and will even be threatened with application to others, and the loss of her reputation. I speak from experience. Still, however, if she value her patient's safety, and the approbation of her own mind, she must be firm, and the event will justify her conduct, and establish her character.

130. Leaving, therefore, nature to her own unassisted, undisturbed efforts, the midwife is to encourage her patient by appearing perfectly calm and easy herself, without hurry or assumed importance; by assuring her, that as far as can now be discovered, all matters are perfectly natural; by entering into easy conversation with her herself, and encouraging her to do so with her friends. She is to direct her

to walk about the chamber, or from room to room; to sit or to lie down, as she finds most agreeable to herself; and if she can, to sleep between her pains, which some women are much disposed to do. At a proper season, the apparatus of a meal, which during labour should be light and sparing, or of the tea-table, may serve to while away an hour; and every occasion of this nature should be embraced to lessen impatience and to protract expectation. Indeed, to gain time during this painful and irritable period, is an acquisition of no inconsiderable moment; for the time which uninterrupted nature requires to bring about the great changes which are now accomplishing, is always necessary; and unquestionably (provided no morbid cause prevent) women in general recover better after a labour rather slow, than after such as are quick and sudden.

Hence, too, we learn the great impropriety of directing the patient at this period, to assist her pains, as it is called, by holding her breath, and exerting her strength; by forcing, straining, and bearing down; which inevitably will exhaust and waste her strength now in the beginning of labour, which may be very necessary for her support at the conclusion of it. Young women in their first labour, are most apt from impatience, to be guilty of this error; by which they necessarily overheat themselves, and may bring on fever; it may likewise occasion the premature bursting of the membranes, an accident too apt to happen without any such effort, when labour begins with very strong pains, and which will inevitably protract it.

Another practice still more dangerous, is that of giving strong heating aromatic teas, cordials, and spiritous liquors, with a view to strengthen the pains; but which can only increase the resistance to their proper effect, by heating the patient, bring-

ing on fever, and checking the natural secretions. On the contrary, let the patient's food consist of cooling fruits, thin gruel, and weak broths; and her drink of small beer, lemonade, and weak tea. In summer, let her chamber be kept cool by open doors and windows; and in winter, only comfortable by moderate fires.

In this manner the first stage of labour is to be passed, now and then cautiously examining its progress; under which circumstance, and when the internal orifice is sufficiently open to admit the finger, the head of the child may easily be felt and distinguished by its regular shape, smoothness and hardness within the lax membranes, and may be made another source of consolation and encouragement to the patient, by assuring her of it; but be cautious how you predict a speedy termination of the labour; unless in such cases, as former experience in the same woman may have convinced you that you will not be deceived: for many circumstances which you cannot now discover, may concur to deceive you; and nothing will tend more to render your patient anxious, and to rob you of her confidence, than disappointment in this respect.

131 Plates xv. xvi. and xvii. are intended to represent these changes, and the situation of the child during the first stage of labour.

PLATE XV.



132. This plate, xv., shows the neck of the womb, obliterated by its perfect development during the latter months of pregnancy; at the end of which, it makes one common cavity with the womb. The development of the neck, however, is not conducted on the same principles as the enlargement of the womb: the sides of the womb retain, at least, their original thickness through the whole period of pregnancy; but the neck of the womb grows thinner as it is developed, and at the expiration of the natural period of pregnancy, sometimes becomes so thin, as to be in danger of being ruptured by a very small force; an accident, which has occasionally happened, when from disease the internal orifice has not

yielded; or from an untoward position, the pressure of the child's head has been made against it; but more frequently from hurry and want of skill in the introduction of the hand into the womb, or in the use of instruments. The internal orifice is here represented as a smooth ring, formed by its protuberant lips, and this is its most perfect form; but in this respect there is almost an endless variety in different women: in some, it will be found smooth, very short, and close shut; in others, irregular in its shape, of different lengths, and partly or wholly open, so as to admit the finger. Much experience, therefore, is necessary to enable us to draw any conclusion, either of the period of pregnancy, or of the state of the labour, from the state of the internal orifice. The head of the child rests on the brim of the pelvis, with the hind head towards one groin, and the face towards the symphysis, or the joining of the sacrum with the ilium of the opposite side; according to the diagonal diameter of the pelvis, (G. G. plate II.) this is the most favourable position for its entering the pelvis, and occurs in most cases.

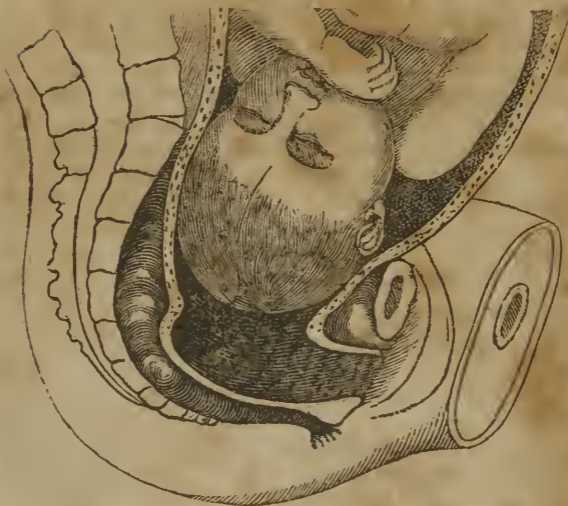
PLATE XVI.



133. This plate, xvi., is designed to show the circumstances which take place when the labour is more advanced. The head and body of the child retain the same diagonal position respecting the pelvis; the internal orifice is largely dilated, but the membranes not yet broken; and the sides of the womb are kept at some distance from the child's body by the retained waters. Under these circumstances, during every pain, the waters are forced before the child's head, and raise it up above the brim of the pelvis; at the same time that the membranous sack is forced through the internal orifice

into the pelvis. Upon the cessation of the pain, the membranes become flaccid, the waters recede, and the head of the child falls down again upon the brim of the pelvis; and being pressed with the finger, retires easily from it. Hence we see the inutility of frequent examination during this period, when little or nothing can be learnt from it; and when, if it be made during the pain, there is great danger of bursting the membranes, and letting out the waters before the parts are properly dilated.

PLATE XVII.



134. This plate, xvii., shows the child's head engaged in the pelvis, immediately after the membranes have burst, when the waters being discharged,

the sides of the womb closely embrace the body and limbs of the child; and the effect of almost every pain may be discovered forcing the child's head through the pelvis.

Some time during this stage, the sooner the better, the patient's dress and bed should be arranged; which although matters of lesser moment, are well worthy some attention. A flannel petticoat or two, and a short-gown, with the linen turned up under it, so as to preserve it dry; or a short shift is the most convenient dress. On that side of the bed on which the patient will lay when on her left side, a blanket three or four double, should be first laid; over that the lower sheet; over the sheet another folded blanket, and over that another sheet four double; and laid across the bed with one end hanging over, so that the midwife may take it on her lap when necessary. This arrangement will be found very convenient at all times during the labour; and by means of it, the patient after she may be delivered, may be made dry and comfortable with very little fatigue. When a cot is made use of, it should be prepared in the same way; and after delivery, it being moved to the side of the bed, the patient is to be lifted from one to the other, without being suffered to rise up.

Second Stage of Labour.

135. This stage of labour commences with the full and complete dilatation of the internal orifice of the womb, and is ended when the child's head has sunk through the brim of the pelvis so low, as to begin to rest upon and distend the soft parts of the mother. (See plate XVIII.) These circumstances can be certainly known only by examination; but

there is likewise a remarkable change in the patient's feelings, and in her manner of expressing them. An experienced midwife will form no inaccurate judgment of the progress of the labour, only by observing her patient's manner, and hearing her cries. Whilst the internal orifice of the womb is opening, the pains are cutting, sharp, and grinding; the patient is restless, bears them with impatience, and expresses her sense of them by sharp and shrill cries; but when this is accomplished, or nearly so, the pains become more supportable, and the patient finds herself instinctively called upon to make some voluntary exertion; she lies quiet, holds her breath, and expresses her sense of pain in a grave tone of voice, or frequently bears them in silence.

186. We have said that about the commencement of this stage of labour, the membranes frequently break, and the water is discharged. This, in well-formed women, especially such as have borne several children, is generally a period of some little alarm; as when the child is small, the head falls almost by its own gravity through the pelvis, and the delivery succeeds immediately; for this circumstance the midwife should always be prepared; and for some time at least, the patient should be laid on her bed, that at all events the necessary assistance may be afforded, and that no accident may happen from hurry, confusion, or mismanagement. But more frequently this stage of labour takes up longer time; and although in a perfectly well-formed woman and a small child, it may end in a few minutes, after the perfect dilatation of the internal orifice; in others, it may require many hours, even in a labour which from first to last, may be accomplished in twenty-four. It is during this stage of labour that the child's head, which enters the pelvis diagonally with one ear towards the

pubes, and the other towards the sacrum, (see plates xv. xvi. xvii.) gradually turns so as to throw the forehead into the hollow of the sacrum, the vertex to the pubes, and the ears from side to side. (See plate xviii.) And it is the obstacles which occur to prevent this favourable turn in the position of the child's head, such as some deformity in the pelvis, some disproportion between that and the child's head, or the unfavourable manner in which the head at first enters the pelvis, which protract this stage of labour, and now and then occasion it to be the most tedious of any : and some authors abound in directions for aiding nature to overcome these obstacles, and for giving to the head of the child the most favourable position, by the hand, or by the assistance of some instrument. But ninety-nine times out of a hundred, all such interference is not only unnecessary, but improper.

137. The great point to be known is, that the shorter or longer duration of this stage of labour, depends on the proportion which exists between the size of the child's head and the openings of the pelvis ; or upon some irregularity in its shape, or some awkwardness in the presentation of the head ; circumstances, which nature, when left to herself, most frequently will vary so as wonderfully to adapt one to the other, in every stage and progress of the labour. The imperfect ossification of the bones in the head of the human foetus, and the loose manner in which they are connected by membranes, (see plate v.) is the provision which nature has made for overcoming these difficulties : where the head is large or the pelvis narrow, the bones ride over one another as the head is forced through the brim ; and the shape of the head becomes more oval and pointed ; entering the brim of the pelvis diagonally with one ear towards the sacrum, and one towards

the pubes; that is, with the narrowest part of the head to the narrowest part of the pelvis, it turns as it descends, where it finds most room; until the face is brought into the hollow of the sacrum, and the vertex or smallest, most pointed part of the head, to the external orifice. In like manner, most untoward presentations will be changed, when time is allowed, and no mismanagement occurs; so that, ultimately, the delivery shall be accomplished by the least possible violence, and with more ease and less hazard to the mother or child, and most probably in a shorter time, than could be effected by any interference of ours, with safety to either.

The principal object, therefore, of our care in this stage of labour, especially when it proves tedious is, to regulate our patient's conduct, to sooth her sufferings, to calm her fears, and above all things, to avoid fatigue. Although, therefore, the woman feel some disposition to voluntary efforts, she is not to be encouraged to exert herself during the pains, more than she can well avoid; her utmost exertion can add little to the contractile force of the womb, and only tends to fatigue and weaken her.

138. The bursting of the membranes, likewise, is a circumstance of great uncertainty: it most frequently happens at the end of the first, or during the second stage; but it sometimes occurs with the first pain, sometimes many days or even weeks before the commencement of labour; at other times after having, in the form of a distended sack, contributed to dilate the internal orifice of the womb, they continue in the same manner to dilate the vagina, the perinæum, and external orifice; and now and then are expelled, either in part, covering the child's head, or entire, with the placenta and waters. But this is a circumstance by no means to be wished, as it may be followed by a dangerous

flooding, or by an inversion of the womb. Whenever, therefore, the bag appears at the external orifice, it may be ruptured, and the waters let out, as they can be of no further use. During this stage of labour, women are less inclined to move than during the first stage; still they are not to be confined to one posture, but indulged, and even encouraged occasionally to rise from the bed, to walk about, and to take some pains leaning over the back of a chair, supported by their friends, or kneeling at the side of the bed.

Third Stage of Labour.

139. The third stage of labour begins at the time when the head of the child, having sunk through the pelvis, begins to rest on and to distend the soft parts of the mother; at which time the vertex presents at the external orifice, and the forehead and face occupy the hollow of the sacrum; and it continues, until the perinæum being stretched and distended into the form of a large protuberant tumour, the external orifice is so far dilated, as to suffer the head and body of the child to pass through without injury. The pains during this period, whilst the perinæum and soft parts are undergoing so great distention, become more severe; and at last, when the head of the child is passing the external orifice, are most exquisite. But they are always least, when the labour has been suffered to go on from the first with little or no interference: and much more excruciating and dangerous, when these tender parts have been fretted and inflamed by improper conduct at the beginning.

The part which is most apt to suffer during this period, is the perinæum, or that portion of skin

which extends from the anus to the external orifice ; which, from the extent of one inch or an inch and a half, is stretched to that of four or five inches, and reduced to the thinness of paper. The perinæum and adjoining parts are relaxed, and prepared for so great a change by the secretion of a large quantity of mucus, by which the parts are softened, and a disposition to yield and stretch is given to them ; at the same time that they are lubricated by it, so as to suffer the child's head to slide easily through them. And whenever there happens to be a deficiency of this mucus, or when, by improper handling, it has been rubbed off, and its secretion checked ; or when a violent and sudden labour does not allow sufficient time for this secretion to take place, and give to those parts a proper disposition to dilate ; the perinæum is apt to be torn ; always an unfortunate accident, and one which sometimes subjects the woman to great misery and inconvenience during the rest of her life.

140. To prevent this accident, is the principal business of the midwife in a natural labour ; and her attention is to be directed towards it, from the very commencement of labour, to the complete delivery of her patient. With this in view, she has been directed to avoid irritating these extremely tender parts, by frequent and unnecessary examination ; or any rude and preposterous attempts to stretch and extend them ; as well as to avoid heating her patient by improper diet, cordials, and spiritous liquors ; by the use of which, fever is brought on, the parts become rigid, and are easily torn. From the commencement of this stage of labour, a woman becomes less inclined, and less able to move ; and the delivery may be expected to be accomplished in a short time.

141. The woman is now, therefore, or rather

before, if she was not there already, to be laid on her bed, in a proper posture for delivery : that is, on her left side, with her hips brought to the edge of the bed, and her knees moderately drawn up, with a pillow between them, and her feet supported against the bedpost, by a foot-board, or against some person sitting on the bed; taking care not to draw her thighs too much up towards the belly; nor to separate the knees very wide; both which put the perinæum on the stretch, and increase the danger of its being torn. The bed being in all respects prepared as directed, the midwife is to seat herself behind on a low chair, taking the end of the sheet which had been laid across the bed, on her lap; she will then find herself most conveniently placed to afford every necessary assistance; still, however, she has nothing to do, and it may require some time before she will perceive the perinæum sufficiently distended, and the external orifice so far dilated, as that the crown of the child's head begins, during each pain, to protrude. She is then to take a soft cloth in her left hand, and placing it over the tumour, with her fingers extended towards the back, and the palm over the perinæum reaching to the external orifice, make a gentle pressure on the tumour during each pain, so as in some measure to retard the sudden advance of the child's head; or rather to be ready to retard it, when a violent pain shall threaten too sudden a delivery. For let it again be recollected, that in a slow labour well managed from the beginning, where the soft parts are properly prepared to yield, the perinæum never is torn; and that all the danger of this unfortunate accident arises from a sudden and violent labour, or one which has been mismanaged in the beginning.

142. It is seldom necessary to make any considerable resistance: but as the child's head passes

through the external orifice, it is always proper, whilst the left hand is kept in the position just now described, to place the fingers and thumb of the right hand collected together, upon the protruding part of the child's head; in this position, the midwife has it in her power to make such resistance with her right hand, as the rapidity with which it advances, may require; and to make it on the head itself rather than on the perinæum; the dilatation of which by too great pressure, will be prevented, and the perinæum itself severely bruised. Experience alone can teach the degree of resistance required; and until the midwife has acquired that experience, she must be cautious not to make more than is necessary; by which, as much mischief may be done as by any other kind of interference. And where the labour has been well conducted from the beginning, much is seldom required. Even where from early mismanagement or from any other cause, the parts are not properly prepared to dilate, and there is a dryness and rigidity of them, the natural mucus may and often does, during a few of the last pains, become so considerable as to save the perinæum.

In cases in which this does not take place, we are directed to anoint and lubricate the parts with pomatum, hog's lard, or oil; and to a certain degree this has its use; but if it is to occasion much handling of the parts, it may even be prejudicial. I have, therefore, commonly preferred to anoint the parts once or twice, and over that to apply a soft flannel, wrung out of warm water; the woman finds this very relieving, and on some occasions, I have continued it for several hours, as I have thought, with real advantage.

143. The sufferings of our patient at this moment, are at the highest, extremely severe, and sometimes

almost beyond endurance; and in the hope of shortening their continuance, she is often inclined, and too frequently called on, to exert her utmost strength. Still, however, her present safety and future comfort, may very much depend upon submission, patience, and gaining a little time: and all extraordinary exertion beyond what she is in some measure compelled to make, is hazardous.

144. Just before the birth, the head is often found to advance during the pains, and to retire again as they remit: and this alternate advance and retiring, is frequently of infinite consequence to the safety of the perinæum. This has been thought by some unnecessarily to protract the sufferings of the woman; and we have been directed even by Smellie, to prevent it by introducing one or two fingers into the anus, and pressing strongly against the brows of the child as the pain remits; but this kind of interference is highly dangerous both to the mother and child. Nature seldom does any thing in vain, and this successive advance and retirement of the child's head is generally of infinite consequence, perhaps absolutely necessary to the safety of the perinæum, by the strength and elasticity of which it is generally occasioned, and which, after some little time, will thereby become perfectly relaxed, and easily distended; if, at last, it should hitch on the child's chin, by introducing a finger within, during the remission of the pain, it may be slipped over it, and with the next pain the head is generally delivered; but even this must not be attempted before the perinæum is perfectly dilated.

145. After the delivery of the head, a short respite ensues; but the pains soon returning, the shoulders of the child are perceived as they descend, to make the same turns as the head had done just before; and after a pain or two, are delivered, one

to the belly and the other to the back of the mother. The next pain advances it to the hips, so that the arms of the child are delivered without any, or at least, with very little assistance. Another short respite now takes place, whilst the hips of the child advance, and with one or two pains, are protruded, and the delivery of the child is accomplished.

146. Upon this slow, gradual, and successive delivery of the different parts of the child; and the contractions of the womb, which severally take place after the delivery of the head, the shoulders, and the hips; depends in a great measure the safe and easy delivery of the after-birth, and the woman's security against a flooding. In this way, time is allowed for the regular contraction of the womb from the fundus, pressing down the after-birth before it: whereas, in a more sudden delivery, when the head, shoulders, and body of the child are delivered by a single pain; the womb may and frequently does contract from its sides, protruding the child, but retaining the placenta high up in the fundus. A midwife, therefore, should never, as is too frequently done, take hold of the child's head, and immediately drag it forth; a very common but a most dangerous practice; generally the cause of severe after-pains, and frequently of much worse consequences; a ruptured perinæum, retained after-birth, and flooding; or an inverted womb, by which the lives of many women have been lost.

147. The birth of the child is always followed by the discharge of what water had been retained in the womb; frequently by some clots of blood, and generally by some fresh blood flowing from those parts of the womb, from which the after-birth has been wholly or in part detached. This generally continues until the womb has so far contracted as to

press on and confine the after-birth: and is the most important reason for suffering the body of the child to be gradually and slowly delivered by successive pains: by which means, when at last it is completely delivered, the womb is already so far contracted, as to secure the patient against a flooding; the most, if not the only dangerous circumstance attendant on a natural labour.

PLATE XVIII.



148. This plate, xviii., is intended to represent the situation of the child at the end of the second and the commencement of the third stage of labour; when the head has descended through the pelvis, and begins to rest on the perinæum; the ears stand across the pelvis, the face is in the hollow of the sacrum, and the vertex or crown offers to the external orifice. When the head has descended thus low, the effect of the pains is to force the child's chin, which before rested on the breast, more and more from that position; and as the breast and shoulders descend through the brim, the chin, constantly receding from the breast, passes over the hollow of the sacrum; the nape of the neck is pressed against the pubes, and the hind-head, as it protrudes the external orifice, rises up from under the arch of the pubes; until the chin, at last, arriving at the external orifice, slips from behind the perinæum, and is delivered. Hence we see, that a moderate pressure of the hand, on the perinæum, during the latter part of this period of labour, not only tends to support and preserve the perinæum from being torn, but being directed towards the pubes, as it always ought to be, promotes the effect of the pains in accomplishing the delivery.

Fourth Stage of Labour.

149. After the child is delivered, let it lie in an easy posture, on its side, a little reclined towards the back; with its head covered, but with its mouth exposed to the air, until it breathes and cries; and until the pulse in the navel string has ceased, or at least become very feeble; after which, tie the navel string with a thread four double, (that it may not endanger cutting the string) in two places, one

about two inches from the child's body, the other about two inches above; and take care to cut it between the knots; an error on either side might be fatal: if below the first knot, to the child already born; if above the second, in case of twins, to that in the womb. The period for tying the navel string is generally thought a matter of little consequence; and it is too frequently done as soon as possible: but if we recollect the changes which must take place, before the foetal circulation of the infant in the womb shall cease, and that through the lungs after its birth shall be established, we shall see the propriety of waiting until these important events take place; and the great mischief which may arise to the infant by tying the cord too soon, of which error an imperfect circulation, livid complexion, difficult breathing, convulsions and death may be the consequence.

The child being removed, a soft cloth is to be applied to the mother. In a little time, from ten to thirty minutes, the pains, which generally cease for a short time after the birth of the child, will probably return, and push the after-birth down below the brim of the pelvis into the vagina; of which, if it is not immediately delivered, the midwife may satisfy herself, by taking the string in her left hand, and passing a finger of her right along it up into the vagina; if within the length of her finger, she can reach that part of the placenta to which the cord is attached, she may rest satisfied that all is safe, because, at any rate, the placenta is within her reach.

150. If, on the contrary, she cannot reach the root of the string, let her examine the patient's belly; she probably will find the womb soft and flaccid, resting on the lower side, or perhaps hanging a little over the pubes; by taking it in the

hollow of her hand, compressing it moderately, raising it up towards its natural position, and at the same time rubbing the surface briskly with the hand, she will soon perceive the womb to contract in size, and to assume the form of a ball of considerable firmness; after this, a very few pains will probably deliver the placenta; and as no danger can arise from delay, except in the case of flooding, the effect of the pains should be relied on for at least another hour. The defect of pains is the most common cause of delay in the delivery of the placenta; and this inaction of the womb is a very common consequence of fatigue, after a severe or tedious labour, especially if mismanaged; but this weakness, so far from being a reason for haste and precipitance, is a most powerful argument for waiting, and making no attempts to separate and extract the placenta; a hasty delivery of which, before the womb has begun to contract with some degree of vigour, will expose the patient to the great danger of a flooding, or inversion of the womb. Under such circumstances, therefore, our efforts must be directed to compose the patient's mind, to cool her when overheated, and to recruit her strength by mild cordials, (No. 17. a. b. c.) and good nourishment: whilst at the same time we attempt to excite the action of the womb as directed above.

151. But if, notwithstanding a due action of the womb, manifested by pain, and a round contracted ball under the pubes, the delivery of the placenta be protracted beyond one or two hours, and the woman and her friends become impatient; there can be no danger, under these circumstances, cautiously to give some assistance. Let the midwife, therefore, twisting the cord round her finger, or wrapping it in a dry cloth, draw it as far back as possible, and put it just so much on the stretch as

to prevent the placenta retiring as the patient expires; for while the cord is on the stretch, the placenta will be found to descend at every inspiration, and to ascend during expiration. Whilst she thus holds the cord in her left hand, she may give a better direction to the small force applied to it, by introducing two fingers of the right hand under the pubes as high as possible towards the root of the cord, and with them press it back towards the sacrum, and at the same time draw the string over the fingers as over a pulley. Whilst introducing the fingers for this purpose, she will frequently find an edge of the placenta hanging through the internal orifice; and by pressing against that instead of the cord, or by taking hold of it between the fingers and thumb, and attempting to carry it into the hollow of the sacrum, she will greatly promote the delivery.

152. But the midwife must always be very careful how she exert any considerable force on the string; which, in some instances, is small, in others inserted by several branches into the placenta, and easily torn from it: at all times an inconvenient, and on some occasions a very serious accident. Or if the string should be so strong as to endure much force, more terrible accidents may follow; the placenta may be torn from its attachment to the womb, of which a violent flooding must be the consequence; or the womb may be in part or wholly inverted, (turned inside out) and actually brought out of the body, which has frequently been the unhappy consequence of imprudent force applied to the cord. This terrible accident is most likely to happen after great fatigue, when the woman is much exhausted, no pains ensue after the birth of the child, and the womb instead of contracting, remains large and flaccid. Let it, therefore, be an invariable rule, not

to tighten the cord, or put it the least on the stretch, until the womb can be felt by the hand applied to the woman's belly, contracted and reduced to a kind of globe of considerable firmness.

The placenta being delivered, unless in cases in which the womb appears to act with considerable vigour, it will be of advantage that the midwife or an assistant continue for some little time to rub the abdomen over the womb, by which its contraction will be excited, the danger of a flooding lessened, and the expulsion of any clots it may contain will be promoted; which will lessen those severe after-pains which arise from the future efforts of the womb to expel them, when by delay they have acquired greater tenacity and adhesion.

153. Let then a soft cloth be applied to the parts of the mother, a towel four or five double to the belly, and over that a broad bandage round her waist is to be pinned so low as to take in the belly, and afford some support to its loose and relaxed sides; but not so tight as to give the least uneasiness. The use of such a bandage has been contested; and no doubt, when a twisted handkerchief is applied in the form of a cord, and drawn very tight, as is too frequently done, it may do much mischief; but when a broad bandage is skilfully applied, as above directed, it will be found very agreeable and comfortable to the woman, and in addition to friction, has a tendency to prevent and relieve that faintness, which is sometimes very alarming to newly delivered women.

Remove the pillow from between the patient's knees, and the wet clothes from under her, and give her a little thin gruel, with a spoonful or two of wine; but avoid brandy, spirits, gin, and all kinds of cordials.

If she has been delivered on a cot, let it be taken

to the side of the bed ; and let her be removed from one to the other without rising at all to an upright posture, which is always dangerous immediately after delivery. It is still better, if she can be made tolerably comfortable, to let her lie for an hour or two upon the cot ; she may, however, turn from one side to the other, and extend and move her limbs. so as to obtain an easy posture.

By such prudent management, in at least ninety-nine cases out of a hundred, nature will be found perfectly equal to a safe and happy delivery ; and it will be accomplished with as little pain, and in as short a space of time, as is consistent with the woman's safety ; and of the few cases which may not proceed with such uninterrupted regularity, the greater number will be brought to a happy conclusion, only by exerting a little more patience in the conduct of the labour.

CHAPTER IV.

OF THE CAUSES AND REMEDIES OF TEDIOUS AND
DIFFICULT LABOURS.

SECTION I.

Tedious and Difficult Labours.

154. SUCH is the progress of natural labour, which should be most carefully studied and thoroughly understood, by all persons undertaking the profession of a midwife; and to which, if it were possible, they ought for a long time to confine their practice: for, they only who are conversant in natural labour, and understand in all their minute circumstances, the process and resources of nature, can be qualified to assist her, in such labours as are difficult and preternatural.

155 Nor can it be too frequently repeated, or too strongly impressed upon young practitioners, that in a natural labour, they have nothing to do but to calm their patient's fears, to fortify her with patience, to regulate her conduct, her diet, and her evacuations; to check all violent efforts, to prevent the accidents of premature and hasty delivery, to receive the child, tie the navel string, and deliver the after-birth, in the cautious manner directed in

the last chapter. There are, however, many circumstances, some of natural occurrence, but more of erroneous conduct in the beginning of labour; which may greatly distress the patient, precipitate labour, or render it unnatural, tedious, and difficult.

156. Upon this subject, one of the most eminent and respectable practitioners and best writers of London, Dr. Denman, with great candour says, "It would be unpardonable to make an assertion, which is not supported by experience; but I am fully convinced, that the far greater number of really difficult labours, to which I have been called, and I must not conceal the truth on this occasion, many of these which have been under my care, originally were not of that description from unavoidable necessity; *but were rendered such by improper management in the commencement or course of the labour.*" Such a confession, from a man of Dr. Denman's great experience and unquestionable knowledge, is of inestimable value; and if duly reflected on, and constantly recollected by the young and inexperienced, will preserve the lives of many women and children, save themselves many painful recollections, and do more to improve their knowledge and usefulness, than years of careless and inattentive practice.

157. Another observation of some importance, and which on many occasions will be recollected with advantage, is, that successive labours of the same woman are very apt to resemble each other; this, when it depends on form, is easily accounted for; but there are certainly other circumstances and peculiarities of constitution besides form, which determine the different and successive labours of the same woman to occur at the same period, in some to anticipate, and in others to be protracted beyond the natural term of pregnancy: in one woman to be

tedious, in another to be remarkably quick; in some to have the membranes break early, and in others to have their labour begin with hæmorrhage; in some the placenta immediately follows the child, in others it is apt to be retained for a considerable time; and even some preternatural presentations are more apt to occur in women who have once suffered them, than in other women who have always had natural labours. This fact, for it is undoubtedly a fact, which most experienced practitioners have confessed, and of which any person may be convinced, who will study the numerous cases which have been published, should put us on our guard, always excite caution, and on some occasions, may prompt to useful means of prevention.

158. And let me once more warn the young and inexperienced practitioner, that it is in tedious and laborious cases of midwifery, that his knowledge, his patience, his humanity, his fortitude, and his integrity, will be put to the severest trial: his knowledge in forming a cool and deliberate judgment of the case before him, his patience in yielding a long and painful attendance, on a case, which he will be too apt to imagine, may by a little interference be speedily despatched; his humanity and fortitude in resisting the distressing complaints and apprehensions of his suffering patient, and the solicitude and sometimes the reproaches of her friends; and his integrity, in permitting no consideration whatsoever to interfere with his present duty; to which he must be prepared to sacrifice his time, his pleasures, his ease, his interest, and even his reputation; or he is unfit for this profession, and should turn his thoughts to another.

Touching.

159. Before considering the causes which may render labour tedious and difficult, or the means by which they may be remedied, it will be necessary again to describe the operation by which alone they can be discovered. I have already given general rules for performing this operation; but as my intention there was only to point out the means of making such discoveries as are necessary to conduct a natural labour, and as a primary intention of this work, is to discourage and prevent all unnecessary meddling and interference, I purposely then avoided being too minute. But now, when we are entering upon the consideration of the causes of tedious and difficult labours, and the means of remedying them, are to decide on the propriety of introducing the hand into the womb, or of having recourse to instruments, it becomes necessary to be more particular.

160. That the student may duly estimate the importance of this operation, let him consider, that on his decision the lives of at least two individuals may depend; that the touch, although the only means in our power, is at best an obscure source of information; and, therefore, that no correct knowledge or useful information, is to be obtained by it; unless we combine the most careful observation and discriminating attention, with frequent opportunities, and long practice. Let him, therefore, never throw away his opportunities by carelessness or inattention; but on every necessary occasion of introducing the finger, reflect coolly what he is about; examine carefully the state of the *os tinæ*, its length, its hardness, its position, its constriction or relaxation, its smoothness or irregularities. Let him examine

the depth of the pelvis, whether or not he can reach the projecting angle of the os sacrum; or its width, by throwing the finger from side to side, towards the processes and tuberosities of the ischia: and comparing what he discovers, with the particular circumstances of his patient, the state of her health, the advance of her pregnancy, the position of the child, and the progress and termination of the labour; not only draw conclusions to serve his present purpose, but treasure up useful information for future occasions.

161. In every case of protracted labour, in which a considerable delay occurs, and the progress of the labour seems to be suspended, after the membranes have broken and the waters have been discharged, we are called on to make an accurate inquiry by the touch, into the cause of such delay and interruption; and to determine on the proper means to remedy it. And in the first place, it is necessary to ascertain, as accurately as possible, the size and form of the superior opening of the pelvis. (Plate II.) Having this in view, the woman may lay on her side, and the examination may be made, as directed, which is the most decent attitude; or on some occasions, when more accuracy is required, she may stand and lean over the back of a chair, whilst the operator kneels at her side; the fore-finger of the right hand being introduced close under the pubes, is to be directed immediately backwards and upwards, until it reach the projection formed by the juncture of the last vertebra of the loins, with the first of the sacrum, (plate III.) then pressing the soft parts with the fore-finger of his left hand, fix it on that of the right immediately under the symphysis pubis, and withdrawing both, that point, making an allowance of near half an inch for the soft parts, will indicate with sufficient accuracy the

distance from the projection of the sacrum to the pubes, or the direct and shortest diameter of the brim or superior opening of the pelvis. (E, C, plate II. and III.) This is by far the most important point to be ascertained; for when this is well formed, the remainder of the pelvis is generally so; and when this is contracted, the transverse diameter (F 2, F 2, plate II.) is more frequently wider than narrower, than it is in a natural state. In the same manner may be examined the distance between the point of the os coccyx, from the inferior edge of the pubes, (G, C, plate III. and IV.) and by pressing against the coccyx, so as to press it back as much as possible, we judge of its rigidity, and what may be expected from its yielding to the pressure of the child's head. We cannot, with equal precision, examine the transverse diameter of the lower opening, or the distance between the tuberosities of the ischia, (H 2, plate III. and IV.) but by throwing the finger within the vagina, from side to side, or by introducing two, and stretching them as wide as possible asunder, we may form an opinion sufficiently accurate to determine our conduct.

Other means of ascertaining the dimensions of the pelvis, by means of instruments applied externally and introduced into the vagina, have been proposed; but besides that they cannot be applied during labour, their application is difficult, extremely offensive to the delicacy of women, and after being submitted to, the information obtained by them, is little more than that obtained from the finger.

162. If you can easily insinuate your finger all around the child's head, feel the ears, and distinguish the sutures; or if you cannot easily reach the jutting-in of the sacrum, you may certainly conclude that the pelvis is not so narrow but that an ordinary

child can safely pass through it. But before drawing any conclusion on the size and form of the pelvis, remember always to inquire, what have been the circumstances of former labours of the same woman. If these have been natural and tolerably easy, we may be sure that no very considerable contraction or deformity exists, and that any difficulty which occurs in the present labour, is to be attributed to some other cause; and, that if induced by apprehension or impatience, you may have had recourse to instruments and violence in one labour, and the same woman have afterwards an easy and natural labour, you may be as certain that you have been precipitate; and ought to learn caution, and determine to exercise more patience and humanity in future.

163. The next point to be inquired into, and carefully ascertained by the touch in all difficult labours, is the position of the child's head. It has been already shown, that in the most natural labour, the child's head enters the superior strait or brim of the pelvis diagonally, with its longest diameter to the longest diameter of the pelvis; that is, with the vertex towards the symphysis of the pubes, with the os ischium on one side, and the forehead towards that which joins the sacrum to the ilium, on the other. (G, G, plate II.) As it descends, this position gradually changes, until it passes the brim, with one ear to the pubes and the other to the os sacrum, and still continuing to turn as it descends, the vertex at last comes out under the pubes. (Plates xv. xvi. xvii.) As the vertex protrudes the soft parts and opens the os externum, the nape of the child's neck is pressed against the pubes, and the chin receding from the child's breast, passes all along the hollow of the sacrum, until it arrive at and turn out under the coccyx. All these circumstances must be care-

fully recollected, whenever we endeavour to ascertain by the touch, with any accuracy, the presentation or the position of the child's head in the pelvis, with the progress and probable termination of the labour.

164. Before the membranes break and the waters are discharged, the information we can receive from the touch, as it respects the position of the head, is very obscure; and it is only when a considerable delay occurs, and the progress of the labour seems to be suspended, that we are called upon to make any very accurate inquiry by the touch, to discover the cause of such suspension, and to determine on the proper means to remedy it. We can discover with ease, whether it be the head, or the face, or any other soft part which presents; and having by the smooth, round, hard tumor of considerable extent, covered with the hairy scalp, discovered it to be the head, we ascertain the position, by the direction of the sutures, and situation of the fontanelles; and, when it can be felt, by the child's ear.

165. When the head enters the brim of the pelvis as it does in a perfectly natural labour, the sagittal suture will be found running diagonally, in the direction of the longest diameter of the pelvis, (plate 11. G, G,) with the posterior fontanelle forward, but considerably to one side, and nearly opposite to the junction of the pubes with the ischium on that side; and the anterior fontanelle backward, and opposite to the sacro-iliac symphysis on the other side: the situation of the ears, which stand at right angles with the sagittal suture is easily conceived, although they may not yet be felt. As the head descends into the cavity of the pelvis, it continually turns, the occiput approaching the pubes, and the forehead retiring towards the hollow of the sacrum, the sagittal suture becomes more direct, and the anterior fonta-

nelle comes into the centre of the pelvis; until by the time that the head fills the cavity of the pelvis, and begins to press on the perinæum, the vertex will be found rising from under the arch of the pubes, the sagittal suture in a direct line from pubes to sacrum, with the posterior fontanelle under the pubes, and the anterior backwards towards the sacrum, with the ears on each side. The sutures are known by their narrow linear openings, and rough serrated edges, the fontanelles by their wider openings, and the angular corners of the bones which form them; the anterior fontanelle by its being placed in the middle, where the sagittal crosses the coronary suture; the posterior fontanelle by the angle at which the lambdoidal sutures meet the sagittal.

166. It is easy to see from the structure of the pelvis, and from the form and dimensions of the child's head, that if it engage in the superior strait or brim of the pelvis, in a different manner from that described in the last paragraph, or if it deviate in its descent from the regular changes in its position there mentioned, the labour will prove proportionally less and less natural, and more and more tedious and difficult. If for instance the head enter the brim of the pelvis, with the vertex to the pubes, and the forehead to the projection of the sacrum, it will present its longest diameter to the shortest diameter of the pelvis; and if the pelvis be in the least contracted in that diameter, which is the most common deformity, the forehead, as the head descends, will be forced down over the projection of the sacrum; the chin of the child will begin early to leave its breast, whilst the vertex remaining hitched over the edge of the pubes, the hind-head will be turned towards the back of the child, and the face will be forced down into the hollow of the

sacrum, which always renders the delivery difficult, and sometimes, without assistance, impossible.

This case is discovered by the touch, when (whilst the head is still high in the pelvis,) we find the sagittal suture direct between the pubes and sacrum, the anterior fontanelle near the centre of the pelvis, and the posterior fontanelle under the pubes.

167. Another position, the reverse of this, and which renders the labour still more difficult, is that in which the child's head engages in the brim of the pelvis, again, with the longest diameter opposed to the shortest diameter of the pelvis; but with the vertex to the projection of the sacrum, and the forehead to the pubes. In this case, the occiput descends before the sacrum, and passes successively over every point in the hollow of that bone over which the chin passes in a natural labour, until it presents at the external orifice of the vagina. The perinæum then, after having been put to its utmost stretch, and perhaps lacerated, slips back over it, and the occiput immediately begins to turn back towards the anus of the woman, making the edge of the perinæum and point of the coccyx, a pivot to the nape of the child's neck. Whilst this is performing, the forehead, if it do not remain stationary, is compelled to ascend; but as soon as the occiput, freed from the perinæum, begins to turn back towards the anus, the forehead begins again to descend, and with every pain more and more of the face appears, until the chin at length slips from under the pubes.

This is the most difficult, and happily the most rare and uncommon position of the child's head: it is discovered by the direction of the sagittal suture, across from pubes to sacrum, by the smaller posterior fontanelle (known by the angle of the lambdoidal bone) being far back near the

sacrum, and the larger anterior fontanelle forward under the pubes : when either ear can be felt, it will give certainty to our conclusion ; when they are found at the sides of the pelvis, then either the forehead or the vertex must be at the pubes ; and which is there, is indicated by the rim of the ear being felt forward or backward ; and the direction or degree of obliquity, by the more direct or oblique situation of the ears. It is easy to conceive between these two extreme cases of oblique presentation, a variety of cases in which the child's head, deviating from the diagonal and most favourable position, and presenting with its longest diameter more and more direct across the shortest diameter of the pelvis, may become more and more difficult, as they have a greater tendency to end at last in one or other of those just described. Yet in all, a woman with a well-formed pelvis, when not exhausted by impatience on her part, or by preposterous and ill directed efforts on that of the midwife, is fully capable to deliver herself. Such delivery may indeed be very slow and painful, but is always attended with less hazard to either mother or child, than commonly attends the introduction of the hand, or of any instrument into the vagina.

SECTION II.

Obstacles from the State of the Parts, and the Form of the Mother.

168. *First child.* In the first place the midwife is to recollect that it is common, and, therefore, that

in some measure it may be said to be natural and necessary, for women with their first children, although young and well formed, to have much more tedious labours than with those which follow. The same delay happens more certainly, and in a greater degree, when women are advanced beyond thirty years of age, before they have a child. On the part of the womb, this may perhaps arise in some measure from want of habit; whence it contracts either feebly or irregularly. We perform all actions, the voluntary as well as involuntary, more easily and readily, and with greater effect after, than before we have been accustomed to them. Some degree of timidity and apprehension, with which almost every woman is affected at the commencement of labour, especially in the case of a first child, may contribute to render the pains at first more weak and ineffectual, and less regular, than they otherwise would be; although it is perfectly natural and common for them to be so, in the beginning of every labour.

169. Very fat women are observed to be subject to slow labours, from a remarkably feeble action of the womb, with which their labours frequently begin: and in some cases of twins, and some in which the womb is over-distended by a very large collection of water, a slow labour follows from the same cause. In all such, as well as in many others, in which the pains are supposed to be weak and ineffectual, it was formerly the practice, to endeavour to excite the action of the womb by hot and stimulating medicines. Prescriptions for this purpose, (the *pulvis ad partum*) are to be found in *Pharmacopœias* of no very early date; and it is still too frequently the practice, to give hot spices, gin, and other spiritous liquors, with intention to excite and strengthen the pains. All such do mischief, by over-

heating the patient, exciting fever, and wasting her strength. Time, patience, leaving the patient at liberty to walk about her chamber, to sit or lie, as she finds most agreeable; calling her attention off from her present situation, by agreeable conversation between her pains, and giving her confidence by proper encouragement, are in such cases our only remedies, and seldom or never fail. Repeated emollient clysters, in the beginning of labour, are always of use, and now and then one that is stimulating, after the labour has somewhat advanced, may be admissible.

170. With regard to the other soft parts, the internal orifice of the womb, the vagina, perinaum, and external orifice; slow labours certainly arise, particularly in the case of a first child, from greater rigidity and resistance, whence they are less disposed to yield and dilate; and longer time is necessary to overcome this resistance, and to give to them the proper disposition to relax. It becomes therefore more necessary, in all such labours, to be very careful of any improper interference, either by frequent examination or rude handling, by heating food or drink, particularly by the use of cordials or spiritous liquors of any kind, by which fever or inflammation may be excited, the soft parts may be rendered dry, and their natural rigidity increased. We must be more attentive to prevent all unnecessary exertion on the part of the patient, by which she may be fatigued, and that strength exhausted in the beginning of her labour, which will be required to support her at the end; and we must arm her with patience, by candidly informing her of the absolute necessity there is, in her case, for longer time than usual to accomplish her delivery with safety. Above all things, the accoucheur must take care not to be hurried himself; but by a calm and composed

manner, to give his patient confidence in his skill; and by gentleness and humanity to sooth her sufferings.

171. It sometimes happens that the internal orifice of the womb is found remarkably thick and rigid; especially in women advanced in life. In such cases, all the advice already given, respecting patience, quiet, dilution, and cool regimen, and all the cautions respecting improper interference of the midwife, in attempts to stretch and dilate the parts, are more particularly necessary, on account of the importance of the part itself, its extreme sensibility, and the great danger of inflaming it. Nor is it uncommon to find the other soft parts, which are concerned in delivery, as well as the internal orifice, rigid and unyielding, and sometimes hot, swelled, and painful; even when no improper interference has occurred. In all such cases, besides the cautions just given, frequent clysters of warm water, and external fomentations, either by sitting over warm water, or applied by means of flannels wrung out of warm water, will be found of great use. But the remedy most to be relied on is bleeding, copious, indeed, in proportion to the strength of the patient; but still not such as unnecessarily to waste that strength which may be required before her delivery shall be accomplished: and for this reason it will be of advantage to keep the woman standing while the blood flows from a large orifice, so as to occasion, with the least loss of blood, some degree of faintness. After bleeding, opium is a safe remedy; and when it is very important to gain time, may be administered in such quantity, as to suppress the pains for a season.

172. It sometimes happens that all these remedies fail; that time is not allowed for them to take effect; or that the internal orifice, rigid, swollen, and inflam-

ed, perhaps by rude handling, is forced by strong and reiterated pains down to the external orifice; may be prolapsed, or even lacerated, by the violence of the pains alone. To prevent so great an evil, time is all-important: let the patient therefore be kept in bed, have her hips raised, and the labour retarded by pressing with the finger on the head of the child during the pains; and when the orifice shall become sufficiently relaxed, gently dilate it, and slip it over the head. Now and then it has happened, that the *os tincae*, rigid perhaps from disease, has from the beginning refused to relax at all; or after having been partially dilated, has resisted all further dilatation. In several such cases, Smellie snipped the edge of the orifice with a scissors, or cut it with a knife; but the event was generally, I believe always, fatal. In all such cases, therefore, we are compelled to wait the effects of the remedies above recommended; and it will frequently happen, that at the moment when our fears are most excited, by the weakness of our patient, that very weakness will produce the effect we wish, and the rigid *os internum* will be relaxed and yield.

173. At other times, from a general anasarca, to which pregnant women are very subject, the labia pudendi will be so greatly distended as to obstruct labour, and threaten inflammation and gangrene: in this case, puncturing the labia with a lancet, is a safe, easy, and efficacious remedy, and should always be performed so early, as to anticipate any danger or inconvenience from this complaint. This kind of anasarca is always cured by delivery.

174. Another swelling, generally of one labium only, which very seldom occurs, and always suddenly during labour, arises from the rupture of a small artery, which pours its blood into the cellular membrane. When this rises to so great a size, as to

prevent the passage of the child's head, it may safely be opened, and the coagulated blood removed; and if the vessel continue to bleed, it may be stopped by the pressure of a dossil of lint. When this swelling is of less moment, it may be neglected until the delivery be accomplished; and then the absorption of the extravasated blood may be promoted by embrocations of vinegar, spirits, or a solution of sal ammoniac.

175. *Premature labours*, which come on before the complete term of pregnancy, and consequently before the soft parts of the mother are properly prepared for them, require for that reason longer time to be accomplished: for nothing is more just than that admirable observation of Dr. Denman, and which cannot be too often recollected; "that the whole period from conception, to recovery after child-birth, is a progressive process; in which, from first to last, one period is constantly preparing the parts concerned, for those changes which they are to undergo, in that which is to follow; and that if nature be interfered with, or precipitated in either, there must be some increased difficulty or danger to overcome in the next."

Every thing which tends to render a woman weak and irritable, (among which, all the debilitating practices of a luxurious life may be reckoned) render her liable, from slight causes, to be thrown prematurely into labour. Nature, however, will not be hurried, or put out of her course with impunity; and a labour of two or three days, which might have been finished in a few hours, is the penalty women frequently pay for a few trifling indulgences.

176. Whenever, therefore, we have good reason to suppose the access of labour premature, it should be suppressed. Bleeding, in proportion to the

strength of the patient, emptying the bowels by an injection, rest in a horizontal posture, and opiates, so as to procure ease, are the means most likely to be useful; but to be effectual, they must be commenced early, and quiet and rest in particular must be persisted in.

Among the causes which frequently bring on premature labour, is the early breaking of the membranes, and the discharge of the waters. This sometimes happens several weeks before the full time, and some women are particularly subject to this accident; which is almost sure to be succeeded by a labour more tedious and painful, than when the membranes remain entire, until after the full accomplishment of the first stage of labour. Because the internal orifice, as well as the perinæum and external parts, are now to be dilated by the head of the child; hard, round, and large, instead of being gradually stretched by the water within the membranes, in the form of a soft conical wedge. This accident may likewise occasion the death of the infant; which, if alive at the commencement of labour, is sure of being so until after the breaking of the membranes; but when that happens early in labour, the child is sometimes born dead, probably from the continued pressure of the womb on some part of the cord, or on the placenta, so as to interrupt the circulation between the mother and child. A very strong argument against the early rupture of the membranes.

177. *Cessation of labour pains.* On some occasions, after having been for a time strong and regular, and perhaps violent, by which the woman has been much fatigued, the pains of labour will cease altogether. This frequently happens upon the bursting of the membranes, and the discharge of a large quantity of water; the os tincæ being no longer irri-

tated by the protruding sack. In this case it is of no consequence : in a little time, as soon as the womb has contracted so much as to press on the body of the child, and begins again to dilate the internal orifice by the pressure of the child's head, the pains will return; or this cessation of pain may happen from fatigue only, and sometimes arises from sudden fright, alarm, or grief, on receiving some distressing intelligence. Rest, mild nourishment, assurance of safety, soothing consolation, and mild anodynes, are in such cases our best remedies. But the cessation of the pains may likewise occur at a very critical moment, when the child's head being pressed low down in the pelvis, the brain may be so injured, that the child may be lost by delay; or a flooding or convulsions coming on, may endanger the mother's life. In all such cases, having waited a sufficient time, and reaped all the advantage which we have a right to expect from the remedies above prescribed, merely irritating the vagina or os internum, by a partial introduction of the hand; or stimulating the womb by the application of a cold wet towel to the abdomen, have been known to renew the pains: and when those have failed, it was formerly the practice to prescribe certain remedies, under an idea of their specific efficacy in bringing on the contractions of the womb: but from their general inefficacy they have been laid aside. Of late however, we have been presented with a remedy, which is said to be possessed of very certain and peculiar powers, in exciting the contractions of the gravid uterus. The testimonies in its favour are so many and so respectable, that they claim for it, at least a careful trial and diligent attention to its effects.

178. This remedy is called by the French, *Ergot*; by the English and the farmers of this country,

spurred rye. It is a disease found in some ears in almost every field of rye, by which some grains grow black, are greatly enlarged, and bent like a cock's spur. It has been long known as unhealthy, and in some measure poisonous, and rye bran, possibly from a mixture of this substance, is supposed by farmers to promote miscarriage in cattle. From the accounts I have received from respectable gentlemen, it seems certainly to be possessed of such great and peculiar powers of exciting the action of the distended womb, as to be capable of doing much good or much harm, and to require much caution in its exhibition.

179. Its most general effect, (for the effect does not certainly follow its exhibition,) is said to be, to excite one long continued and uninterrupted action of the womb; which has been known to continue for an hour or more, until its contents be expelled, or the energy of the remedy, as well as the strength of the patient be exhausted, and probably the child destroyed. Hence we may easily deduce the rules for its exhibition. First, never to administer this remedy in the beginning of labour, nor at any other period before the discharge of the natural mucus be established, the orifice of the womb fully dilated, and all the soft parts of the woman perfectly relaxed and prepared for the delivery. Secondly; before exhibiting this remedy, we should be fully informed of the presentation of the child, and the dimensions of the pelvis, so as to be certain that there exist no absolute impossibility to the delivery; and that the expulsion of the foetus is retarded only by the feeble action of the womb. Thirdly, if not given before the woman's strength be greatly exhausted, it must be suspended until it shall be again in some measure recruited, lest the exertion it brings on should be more than she is able to bear.

180. It is recommended by Mr. Oliver Prescott, M. A. in the *Philadelphia Eclectic Repertory*, for January, 1814, who gives the best account of it which I have seen; to be given in the form of decoction, made by boiling for a few minutes half a drachm in so much water as to leave strained four ounces, of which a large table-spoonful may be given every ten minutes, until a sufficient effect be produced. In this way, Mr. Prescott asserts, it will increase the vigour of the pains, without producing such excessive and constant action as may become dangerous.

181. It is recommended, and may probably be of great use to women who are subject to floodings after the delivery of the placenta; and as it is said to produce its effects very suddenly, even when such cases occur without being anticipated, may probably prove a valuable remedy; immediately lessening the capacity of the womb, and thus contracting the open mouths of the bleeding vessels. In cases likewise of long retention of the placenta without flooding and without pain, it may probably promote its expulsion, in a safer way than by manual extraction. And in cases of extreme deformity, where it is known from preceding cases and skilful examination that a woman cannot bring forth a living child at full time, it may be used in aid of other means to bring on premature labour.

182. Like all active remedies, and like every other interposition of art in the process of labour, (if it be found by further experience to be possessed of the great powers attributed to it) it will be liable to much abuse. It will be administered to gratify unjustifiable impatience of the patient, and to shorten the attendance of the midwife. It will be given in preternatural presentations, or in very contracted pelves, from ignorance of the proper modes of relief;

and if its powers become generally known, it will be employed to cover and conceal licentiousness. I am very sorry to add, that even already, since writing the above paragraph, I have seen a proof of this prediction being verified. One of the warmest advocates of this remedy, and a practitioner of considerable celebrity, in pronouncing its eulogium intimates, that now no woman need suffer the pains of labour, and no practitioner lose his time in a longer attendance than *three hours*: and that, after such a period he is in the habit of exhibiting the ergot, to hasten the termination of the labour. A more inconsiderate, dangerous, or unjustifiable sentiment cannot be expressed, and I earnestly advise him to reconsider and correct it.

183. *Narrow pelvis, or large head.* When after the complete dilatation of the os uteri, and after the membranes have been broken and the waters discharged, the child's head remains long high and almost out of reach, we may predict a slow and difficult labour. And when its entrance into, and its descent through the pelvis are observed to be remarkably slow, and the bones of the child's head, as it descends, are observed to overlap each other, and the presenting part becomes sharp and prominent; or when it presents a ridge like a hog's back, and the scalp of the child is felt loose and wrinkled over it, the difficulty arises from some disproportion between the child's head and the pelvis of the mother; either from a contracted pelvis, or from the child's head being remarkably large. In most of these cases, more care and longer time only are necessary. The repetition of the pains, will at last mould and shape the head into the form and dimensions of the pelvis; and in general it will pass with more ease and safety, both to the child and mother, than can be effected by any other means.

184. The child's head being too firmly ossified, which is apt to occur when the access of labour is considerably protracted beyond the natural period of nine months, may be another cause of delay at this period of labour; or it may be preternaturally enlarged by disease, particularly by the hydrocephalus, which is most apt to occur in the fœtus. Either of these causes may be discovered by a careful examination. In neither does the head readily assume that conical shape, which it commonly does in passing through a narrow pelvis; but for a long time after the breaking of the membranes, and notwithstanding regular and strong pains, remains broad and flat, above the brim of the pelvis. In the first case the head feels firm, and the sutures and fontanelles small and narrow; in the latter case, the bones are found remarkably loose, easily moved, and the sutures and fontanelles remarkably wide. In the first; time, gentleness, and patience are our best remedies; in the latter, having ascertained the disease, letting out the water is a certain remedy. But as some uncertainty will always accompany the suspicion of this disease, especially in a young practitioner; and as the child is necessarily lost by this operation, and whilst the woman's strength continues good, there is no danger; it becomes our duty to wait, until we have good reason to apprehend the woman may be endangered by longer delay; or until repeated examination and deliberate reflection, have removed all doubt of the nature of the impediment.

185. *Unnatural position of the child's head.* All cases of unnatural position of the child's head, in which the vertex and forehead, deviating from the diagonal and most favourable direction, enter the superior strait of the pelvis, more or less inclined to its direct and shortest diameter; and one or the

other hitching over the pubes, retards the delivery, until the opposite part be forced through the hollow of the sacrum and over the perinæum; and all cases in which the face or ears of the child present, necessarily render the labour very slow. Yet in most of these, in a well-formed pelvis, nature is fully equal to the delivery; and nothing more is necessary, than time, patience, and good management, from the beginning. For in all these cases, unembarrassed nature is fruitful of resources, and will either compress and mould the child's head into a size and form that will pass, or will turn and alter its position so as to adapt it to the passage. And it is an unquestionable fact, that ever since the art of midwifery has been cultivated upon philosophic principles, and practised on the faithful deductions of enlightened experience, the interposition of art in slow and tedious labours, has been gradually declining; and that now, whilst in the hands of the most learned and most experienced accoucheurs, most of these cases are left to nature, and happily accomplished by her efforts; many unhappy women, (who fall into the hands of ignorant, inexperienced, rash, and presumptuous practitioners,) and a still greater number of children, are annually sacrificed by the needless interposition of art.

SECTION III.

Obstacles from the State of the Mother's Health.

186. In nervous and low spirited women, and in cases of great weakness, either from mere delicacy

of constitution, or in consequence of disease, every thing depends upon calm and steady management. The patient is not to be put on her labour too early, her strength is to be supported by proper diet of good broths, or gruel with some wine; but carefully avoid spiritous liquors, and every thing that will heat and fatigue: necessary rest is to be procured, and time gained by moderate opiates. By these means nature will generally be found equal to the accomplishment of a safe and happy delivery: for in all such cases, even where women have been reduced to great weakness by consumption and other diseases, the resistance is generally proportioned to the strength of the patient. The contractile power of the womb, which is not a voluntary action, is less impaired than such actions as depend on the will; and, although such patients frequently suffer from the consequences of delivery, their labours are commonly short and easy.

187. In cases of an opposite nature, in strong and healthy women of rigid fibres and full habits, accompanied with a strong pulse and more heat than natural; bleeding, open bowels, and a cool regimen are absolutely necessary; an easy moisture may be brought on the skin by tepid drinks, and repeated clysters of warm water should be administered, not only to keep the bowels open, but that they may act as a partial bath, and relax the parts.

188. When in either case, the natural pains have been interrupted, the labour protracted, and the woman exhausted by mismanagement in the beginning of labour, this error must be remedied by an opposite conduct; the woman's strength must be recruited by a proper diet of broth, gruel, and a moderate quantity of wine, and rest must be procured by moderate anodynes; the natural pains will return. the woman will acquire both resolution and

strength, and the labour will probably end happily. In these cases, it sometimes happens that the woman is worn out by irregular, tedious, and ineffectual pains; in such cases, a large anodyne of fifty or sixty drops of laudanum, and aided by an anodyne clyster, so as to suppress these irregular and useless pains, and to procure a few hours sleep, is frequently followed by the most happy consequences: the use however of large anodynes requires some judgment, and must not be hastily adopted on every occasion of impatience, lest we interrupt those pains which are essential to the labour.

189. *A distended bladder.* When the head has been long wedged in the pelvis, pressing the urethra strongly against the pubes, the collection of urine will sometimes be so great, as not only by the pain and distress it occasions to interrupt the pains, and disturb the progress of the labour; but to endanger the bursting of the bladder; whilst at the same time, to draw off the urine may be attended with great difficulty, and sometimes is found impossible. A very small catheter, in which, however, the perforations through which the urine is to pass are large, will be much more easily introduced than the large female catheter, which is recommended in common cases. A flatted catheter, invented by Dr. Kelly, is probably still better; or, what I have found very convenient on such occasions, a small male catheter made of elastic gum, and introduced without its wire, or with the assistance of the small elastic wire of the common catheter. This possesses sufficient elasticity, will accommodate itself to the passage, and being carefully but steadily introduced will be gradually insinuated into the bladder, when it may be found impossible to introduce any other. In the introduction of either, it may be necessary to assist and relieve the urethra, by push-

ing up the head of the child a little from the brim of the pelvis. When the head of the child has passed the brim, and descended into the hollow of the sacrum, the pressure on the urethra is frequently so far relieved, as that the urine is found to dribble away in small quantities; sometimes during the pain, and at others during the intermissions of pain: and this may be promoted by introducing two fingers under the pubes, in such a manner as to leave a small space between them, for the urethra; and by pressing the head of the child backwards and downwards into the hollow of the sacrum, between or during the pains, as shall be found best to insure our purpose. The introduction of the catheter, will be much facilitated by paying attention to the changes, which under the circumstances of advanced pregnancy, labour, and a distended bladder, necessarily take place in the length and direction of the urethra.

PLATE XIX.



190. This plate, XIX., taken from Bell's Anatomy, is intended to explain these circumstances: A, the child's head sunk low in the pelvis; C, the neck of the bladder pressed between that and the pubes, D; in consequence of which, the urethra is greatly elongated; and the bladder, E, distended with urine above the brim of the pelvis, is sometimes so greatly enlarged as to reach to the pit of the stomach. If, under these circumstances, the catheter be introduced in the usual way, as at F, the operator will find great difficulty, and probably be foiled in the attempt; but if, after introducing the point of the

instrument, the handle is inclined very much back towards the perinæum, as in the position, G, the point will glide up between the child's head and the pubes with very little difficulty. The symptoms attending a suppression of urine and distended bladder, during the last stage of labour, are occasionally so very distressing and dangerous, that constant attention should be given to prevent it, and every means in our power made use of to relieve it as soon as discovered: when too long neglected, it will sometimes be found impossible to discharge the urine until after the child is delivered; and to prevent the danger of the bladder either bursting or sloughing, it may in some extreme cases become necessary to deliver the woman by means of the forceps. After which the catheter should be introduced even before the delivery of the placenta.

191. *Convulsions* occurring at the commencement of labour, or during its continuance, are among the most terrifying and dangerous symptoms of parturition. They seem in some measure to depend on the state of the os internum; and most frequently occur whilst it is on the stretch, and before it is perfectly relaxed. But besides this, much depends on predisposition. Some women are particularly liable to, and have regularly fallen into, convulsions, at the commencement of successive labours; and in others they have been occasioned by sudden alarm, or the abrupt communication of some distressing intelligence. Women of great irritability, violent passions, a full, and sanguine habit, are most liable to convulsions; and in such, they are frequently preceded by headache, giddiness, or some defect in vision. These facts will indicate the means of prevention; to avoid all occasional causes, to pay particular attention to the diet, and to the state of the bowels; and when-

ever we have any reason, from former occurrence, or from present symptoms, to apprehend an attack, to anticipate it by the early and diligent use of proper evacuations, particularly by copious blood-letting. The patient is to be kept quiet and cool, perspiration is to be promoted by tepid drinks; and when the fits actually do occur, after due attention to these first and most important remedies, an emetic may be given with probable advantage; and a large blister should be applied between the shoulders.

192. *Hysterics and slight convulsions*, out of which the woman awakes in her perfect senses, are seldom dangerous; and if the child be observed to advance with each fit, nothing more than the general evacuations above mentioned, which will not interfere with the progress of the labour, will be necessary. But when the fits are attended with frothing at the mouth, and laborious breathing, and when between them the patient lies in an insensible lethargic state, they become extremely dangerous. In this case, after copious evacuations, delivery may become our only remedy; and if the fits be observed to return at regular intervals, and to have some effect in putting the internal orifice of the womb upon the stretch, during each convulsion; and that be found soft, moist, and relaxed during the intervals, we may hope for a speedy delivery; in which case the labour is to be suffered to go on uninterruptedly. But if again the labour shall appear to be at a stand, it may then be proper to break the membranes and let out the water; from which alone the convulsions have been known to cease; the labour pains have become more effectual, and the delivery been speedily accomplished. This, however, should never be put in practice, but by a person capable in the last necessity to proceed to immediate de-

livery; because, if it should fail, the waters being discharged, and the womb suffered to contract strongly about the body of the child, will inevitably render the delivery by art more difficult. If therefore, notwithstanding the remedies recommended, the convulsions increase, the labour appear at a stand, and the orifice of the womb sufficiently dilated; it may become absolutely necessary to save the patient, by introducing the hand into the womb, and delivering by the feet.

193. But all attempts to distend and open the internal orifice, are highly dangerous, and most probably will increase the convulsions; where therefore, this difficulty to the introduction of the hand appears, we must rely upon the evacuations already recommended, with stimulating clysters; and after these, solid opium, to the quantity of a grain every hour, or thirty drops of laudanum, as far as three or four doses, or powerful anodyne elysters, consisting each of 100 or 150 drops of laudanum, may be repeated at like intervals, until the convulsions shall be suspended. But the use of opium, in these cases, is always of doubtful efficacy; and as soon as it can be procured, the warm bath, always safe, and frequently efficacious, should be tried. The patient will, on some occasions, remain free from convulsions, as long as she remain in the bath; when this proves to be the ease, leave her there for a considerable time, and let her take her pains in the bath, until the labour be so far advanced, that probably a very few pains may end it: and should the fits return on taking her out, let her be returned to it, and delivered in it.

194. Dr. Denman mentions dashing cold water on the face on the approach of the fits, and continually repeating it, as often as they are indicated, as an effectual remedy to keep them off; whilst at the

same time, the labour may be going on to a happy termination; or at least, may advance so as to render the interposition of art more safe and easy.

195. If the convulsions come on, or be protracted until the second stage of labour shall be nearly completed, and the child's head shall have fallen low down in the pelvis, the delivery may be accomplished by the forceps; or if the head should remain too high, and the continuance and violence of the convulsions be such as to make us despair of the woman's recovery, especially if she lay between them in an uninterrupted stupor; in such a desperate case, it may be necessary and perhaps justifiable to have recourse to the perforator and crêchet. But it should always be recollected, that the chance of saving the mother is not very great; and that sometimes when we have least expectation of it, the labour has suddenly advanced, and both mother and child have been saved.

196. Whether the delivery on these occasions have been accomplished by nature or art, that of the placenta is never to be forced, nor even hastened, unless a flooding should make it necessary. When the convulsions continue after delivery, the case becomes extremely dangerous, and our hopes of recovery almost annihilated; still, however, the remedies recommended at their commencement, are to be continued, as far as the strength of the patient shall make them safe.

197. *Cramps in the thighs* are very common during labour, but seldom continue beyond the first stage, whilst the internal orifice is opening. Frictions, with warm spirits, with the addition of one half laudanum; the volatile liniment, or the application of æther, will generally relieve them. When they occur in the side of the belly, they become sometimes very distressing, and interrupt the pains of

labour. In such cases, after due evacuations, it may become necessary to quiet them by the internal use of laudanum, in repeated doses of twenty or thirty drops, until it produce a proper effect.



SECTION IV.

Obstacles on the part of the Child and Secundines.

198. *Dead child.* It was formerly a received opinion, and even still some are apprehensive, that the child being dead may occasion the labour to be more tedious and difficult; but the truth is, that the child is absolutely passive as to its birth, and that dead children are delivered after a labour, as perfectly natural and easy in every stage, as those that are alive and healthy.

199. A small child is certainly (all other circumstances being the same) delivered after a more easy labour, than one that is very large; and the size of the infant alone may occasion labour to be very tedious: but this circumstance can only be conjectured before birth; nor is it of much consequence, as time and prudence, in such cases, will accomplish the delivery: and the only caution necessary, is carefully to avoid fatiguing the patient, or breaking the membranes too early.

200. The membranes giving way very early in labour, or some time before its commencement, has been already mentioned as a frequent cause of premature, and consequently, of tedious and difficult

labour. On the contrary, it sometimes happens, that in consequence of the membranes being remarkably strong, the labour will be protracted, until, from that circumstance alone, it becomes alarming. In such cases, the membranes remain a long time pushed down, during every pain, into the vagina; yet neither breaking nor advancing, although the internal orifice of the womb be *fully dilated*; breaking them, and letting out the water, has, under these circumstances, been found to promote delivery.

201. At other times, where the internal orifice of the womb has been largely open for a considerable time, and the head of the child is found to make no advance; and at the same time, upon examining during the intervals of the pains, the head is found to recede from the finger, and give the sensation of floating back into the womb; we may conclude there to be a very large quantity of water, and that the womb, contracting on this, has little effect upon the body of the child. Breaking the membranes, by discharging the water, and bringing the womb to act immediately upon the body of the child, may promote the delivery.

In other cases, in which the membranes are very strong, the head of the child may be forced by the pains low down, with the membranes stretched smooth over it, and no water between them. In this case, likewise, when they are found to retard the labour, scratching with the nail will cause them to separate, and suffer the head to pass through them.

202. I mention this remedy, however, with some apprehension, because it may, and actually has happened, that the neck of the womb, stretched very thin over the child's head, has been mistaken for the membranes, and great injury has been done in consequence of the mistake. Let, therefore,

every case in which it may be thought necessary to break the membranes, be well considered. Their breaking too early, is much more frequently the cause of delay; and a case can hardly be supposed, in which uninterrupted nature will not at length overcome this obstacle. Considerable experience, therefore, ought to concur with mature deliberation, in forming the determination to break the membranes.

203. *Navel string.* A short navel string, or one twisted round the child's neck, may protract delivery; and this may be suspected to be the case, when the child's head advancing with effectual pain, is observed to retire again during the intermission. In this case, Smellie directs us to introduce two fingers into the rectum, and when the child's head has advanced by the pain, to press against the forehead and eyebrows, so as to retain it in that position; by which means, after two or three pains, it will no longer retire. This will frequently be so far successful; but it is an indecent practice, by which we may injure the child's eyes, bruise the parts of the mother, and bring the child's head to press prematurely on the perinaeum, the strength and elasticity of which sometimes produces this very effect. It is, therefore, more safe to leave this matter to the effect of a little longer time, and a few more pains; turning the woman from her side to her back, with her head and shoulders so much raised as to add the weight of the child to the pressure of the pains; or, what may prove more effectual, to get her upright on her feet, at the back of a chair; and sometimes, though not apparently for the same reason, kneeling at the bedside, will produce the same happy consequences. After the child's head is delivered, we are directed, if the cord be found around the neck, to untwist it, and

bring it over the head, or to slip it over the shoulders. I have frequently found the latter to be most easily accomplished; but either is generally difficult, and sometimes impossible. At the same time the cord may be found so tight about the child's neck as to be in danger of strangling it, after the head is born. Discovering no pulsation in the cord indicates this danger, in which case it may be necessary to cut the cord, with a view not only to save the child, but likewise to prevent a separation of the placenta, or an inversion of the womb, which might be the consequence of a sudden delivery of the body, whilst the cord is so much shortened, as it must be, by several turns round the neck. If the cord be cut, be careful to secure both ends, that after permitting it to bleed a little, both may be tied.

204. If during this season of delay, a flooding should come on, the delivery must be promoted by every means in our power; and if it prove so violent as to threaten the woman's life, recourse must be had to the introduction of the hand, and turning; or to the use of the forceps, as the circumstances may indicate.

205. *Twins* are generally delivered after a labour more slow than that of a single child. The case may be suspected, from the large size of the woman during pregnancy; and is easily ascertained by laying the hand on the abdomen of the woman, immediately after the birth of the first child. It should be a rule never to inform the mother of it; and the first caution necessary, is never to make the least attempt to deliver the after burthen; but to tie the end of the navel string, if that was not already done, before dividing it. The delivery of the second child, is to be conducted by the same rules as that of the first; leaving it in all cases, except that of

a flooding or a cross birth, to nature. It is generally, from the small size of the child, accomplished with more ease than that of a single child; yet in case of a cross birth, in the hands of a person of skill and experience, it should be turned and delivered by the feet. The delivery of the placenta, which is commonly much larger than that of a single child, is proportionally slower. Smellie, in these cases, as well as on many other occasions, is too fond of slipping his hand, (as he expresses it) into the womb, to bring away the placenta, and when he found it attached to the womb, to separate it with his fingers; a practice always dangerous, and in most cases, except that of a dangerous flooding, unnecessary.

206. *Flooding.* It was said, that floodings before the seventh month are generally free from danger to the mother, and never admit of manual assistance. Those, on the contrary, which occur during the last three months of pregnancy, are never free from danger, and the woman's safety generally depends on a speedy delivery. The immediate cause of hæmorrhage in these cases, may always be referred to a separation of the placenta from its attachment to the womb, which is either accidental or necessary: accidental, when, from external violence, great fatigue, or bodily exertion, such as violent straining at stool, lifting heavy burthens, or some such imprudence; the large vessels which necessarily pass between the womb and placenta, are torn asunder; or necessary, when the placenta being wholly or in part attached over the internal orifice of the womb; in the last months, when the neck is nearly obliterated, and the orifice begins to give way, a separation between the womb and placenta must necessarily take place. Hence we see the real nature of these hæmorrhages, the reason why

delivery is the only cure to be depended on; and the propriety of the rule, to deliver a woman by art, in all cases of dangerous hæmorrhage in the three last months of pregnancy; as soon as the state of the parts will permit the introduction of the hand into the womb.

207. But the introduction of the hand into the womb, under circumstances of such alarm and terror, as frequently accompany these cases, is an operation which requires great skill, calm reflection, and steady resolution; and is the case above all others in which the most experienced practitioner will always wish, and the young and inexperienced should always require, the aid and consolation to be derived from consultation. This, therefore, as well as some circumstances of the case, particularly that of a rigid and undilatable os internum, may probably occasion some necessary delay; during which such palliative remedies, as from experience have been found useful may be put in practice.

208. A small show of blood is not uncommon at the commencement of labour, or during its progress; and if moderate may be disregarded, except in so far as to keep the woman tranquil and cool, by confining her to a horizontal posture, laying her on a mattress or straw bed, strictly forbidding all kinds of hot drinks, animal food, spiritous liquors and cordials; and being very careful that the bladder and bowels be kept empty. The progress of the labour generally suspends the hæmorrhage, and delivery cures it.

209. *Blood-letting* is generally the first remedy thought of in all cases of uterine hæmorrhage; and when they are accompanied by increased heat, a strong pulse, and a flushed countenance, and particularly after any violence, is unquestionably proper; but in advanced pregnancy, and particularly

if the woman have already lost much blood, it frequently requires some consideration; because, at these periods, the hæmorrhage is often so profuse, that the loss of a pound, or even half a pound of blood, in addition to what the patient already has and still must lose, may turn the scale against her.

210. *Absolute rest*, in a horizontal posture, is the most essential requisite in restraining uterine hæmorrhage; it must be strictly observed while the flow continues, and persevered in for a considerable time after it has subsided; nor can we, with any prudence, remit a watchful attention, until the woman, by delivery, be placed out of danger.

211. *The application of cold*, is another remedy of essential efficacy in restraining hæmorrhage. At the commencement and during the active stage, it may be applied with great freedom, with intention to reduce the general heat, and to calm and lessen the force of the circulation: but cold must not be used with such freedom after the first stage of hæmorrhage; and when the discharge, either from its violence or continuance, has gone so far as to reduce the natural heat and strength of the patient, the general and vigorous application of cold must be discontinued. Pale lips, a feeble pulse, and cold extremities, not only forbid the further application of cold, but may even require warm applications to preserve what remains of life, until other remedies may prove effectual. But cold not only possesses the power to lessen the heat of the body, and to reduce the force of the circulation, but its topical application likewise promotes the coagulation of the blood, by which the mouths of the bleeding vessels are plugged up, and stimulates the womb to contraction by which their diameters are diminished. With this intention, therefore, even where its general application may be thought unadvisable, cloths

wrung out of cold water or vinegar may be applied to the external parts, and cold water may be injected, or ice or snow may be introduced into the vagina, or a dossil of lint or a sponge wet with cold vinegar, spirits, or a strong solution of alum or sugar of lead may be introduced far up into the vagina.

212. In cases in which, from the rigid and contracted state of the os internum, there is no probability, perhaps with safety, no possibility, of a speedy delivery. To gain time until it may become relaxed, Hoffman and Mauriceau recommend stuffing the vagina with soft linen or tow soaked in oxygenate, or some astringent solution; in which practice they have been followed by Prefect, Baudelocque, and Burns, all practitioners of great experience, and the two latter teachers of eminence. I confess I have no experience of this remedy; still, however, it rests upon so good authority, that I do not think I should be justified to pass it over in silence. It is particularly recommended in cases of considerable discharge, which have resisted the first remedies, bleeding, rest, and cold; and where the internal orifice of the womb, is still so firm and close shut, as to render manual assistance improper. Under such circumstances, Mr. Burns asserts its advantages to be great and speedy; and that he knows no method more safe or more effectual for restraining the hæmorrhage. Nor can there be a case in which this is more desirable, than when we wish to gain time for the further relaxation of the os tincæ, or to call to our aid the advice and assistance of another. The method of performing it, recommended by Mr. Burns, is to wring soft linen out of sweet oil, and introducing first one corner high up into the vagina, gradually press in more and more, until the vagina shall be well filled with it; then laying a thick compress over the external parts, confine it by the

hand or by a bandage. The principal objection to this remedy seems to be, that it may only conceal instead of checking the hæmorrhage; and as sometimes happens from other causes, the woman may continue to bleed internally, although that is not manifested by any external discharge. Increasing weakness, a fluttering pulse, and great languor, accompanied by an increased distention of the belly, point out this most dangerous state; and when they occur, the complaint seldom admits of any palliative remedy; delivery is the only sure resource, and must be promptly decided on.

213. By some or all of these means we may probably succeed in restraining the hæmorrhage, so long, at least, as may be requisite to prepare the parts for delivery. But the calm obtained is too often deceitful; and the hæmorrhage will frequently return either spontaneously or after the slightest error. Sometimes after a considerable discharge, even in the seventh or eighth month, the woman may go to her full time; but still, let the intermission have been ever so long, or ever so complete, we are never to omit a watchful attention to our patient, until she be delivered. She must be more than commonly careful of motion, or any thing that will excite the circulation; her bowels must be kept open by small doses of salts, her diet must be cooling and consist chiefly of vegetables, taken in small quantities at a time. It is too common a practice, under circumstances of weakness after hæmorrhage, to take nourishing diet in full quantity to recruit the strength, and a good appetite frequently prompts to such indulgence; but no error is more dangerous, or tends more certainly to renew the hæmorrhage.

214. When flooding occurs at the commencement of labour, or when labour pains accompany it, and the internal orifice is so far dilated as to

admit the finger, it may easily be discovered by the feel of the presenting part, whether that be the placenta or the membranes. The placenta presents a rough, thick, soft, lobated, and spongy substance; the membranes one that is smooth and thin. Sometimes a small edge of the placenta may be felt on one side of the orifice, and the membranes over the remainder; the probability of restraining the hæmorrhage is much greater, when no part of the placenta can be felt, and the mode of relief somewhat different. When it is clearly ascertained that membranes and not the placenta present, breaking the membranes and discharging the waters will bring the womb to clasp firmly about the body of the child, by which the size of the bleeding vessels may be diminished, their open mouths compressed, and the hæmorrhage checked: at the same time the strength of the pains will probably increase, so as that the delivery shall soon be accomplished. But when the placenta is attached over the mouth of the womb, then as the labour advances, more and more of the placenta must be torn from its attachment to the womb, and the hæmorrhage will be necessarily increased. In this case, the introduction of the hand, turning the child, and delivering immediately by the feet, is the only remedy; and as this operation is much more easily performed before, than after the waters are discharged from the womb, the membranes must not be broken, until it be determined to proceed to immediate delivery.

215. *Introducing the hand into the womb, turning the child, and delivering by the feet*, is an operation seldom attended with much difficulty or danger, provided it be performed early, before the waters of the womb are fully discharged, and with due deliberation and caution. Whenever it is determined on, let the woman be brought down to the edge of the

bed, still lying on her side, or as I have generally found most convenient, on her back; her hips a little raised, and her feet supported on the lap of an assistant on each side; whilst a double sheet spread under her, over the laps of the assistants, and that of the accoucheur, (sitting on a low seat before her) protects her from cold, and another thrown over her, forms a decent covering. The hand then lubricated with good oil, or fresh hog's lard, and the fingers collected into a cone; is to be gently and slowly introduced, through the os externum into the vagina; which, in some women a little advanced in life, especially in case of a first child, may make so much resistance as to require an hour or more; employed in gradual and cautious efforts to overcome; when the circumstances of the case will admit of such delay. The internal orifice is next to be dilated, by introducing first one finger and then another, until by slow and gentle attempts it will admit the hand; remembering always, that by the natural contractions of the womb, the orifice will be more safely and easily dilated, than by the finger. Whenever, therefore, the pains occur, our efforts to dilate are to be suspended, and the pains are to be permitted to produce their effect on the hand. When the pain ceases, a gentle distention is again to be made, which will probably soon occasion another pain; which is again to be permitted to produce its effect. And on some occasions, just as the hand is passing into the womb, it is to be opened and laid flat, lest a violent contraction on the knuckles, should injure, perhaps rupture the neck, which is the part most liable to such an accident. The orifice of the womb being sufficiently dilated, if the hand can then be easily passed over that part of the placenta which has been already separated, until it reach the membranes, that is to be done; and break-

ing the membranes, it is to be immediately passed into the womb. But if we cannot readily pass the separated portion of the placenta, and the flooding be profuse, it may be necessary to pass through the placenta; which is less dangerous either to the mother or child, than to separate a larger portion, by passing the hand between it and the uterus. The hand being introduced into the womb, the neck will generally cling so close round the wrist as to prevent the escape of much water, and we shall find room to act with freedom; and as the same pressure generally suspends the hæmorrhage, we may take time for deliberation. It is therefore generally proper at this period to rest a few minutes, to recover any fatigue we may have sustained; and to refresh the woman by some proper drink, whilst we deliberate on the circumstances of the case, consider the position of the child, and the readiest way to get at the feet. It will be recollected, that the most natural presentation is the most common; and that in that case, the child's head is at the brim of the pelvis, with the face and belly to the back of the mother, the knees bent to its breast, and the feet towards the fundus uteri. As therefore, the child must ultimately be turned, this may be the best time to push the head and shoulders up towards the fundus uteri, and to turn the face of the child to the back of the mother; which is most easily done within the membranes, and by which the feet will be brought within reach of the hand; and having secured them, they may be easily brought by a waving motion into the vagina. It is always best, when it can easily be done, to bring down both feet; one however will answer, and generally the child can be turned and delivered by one, with nearly as much ease as by both. In bringing down the feet, bend them a little to either side where you find most

room, and remember always to desist during the action of a pain, and proceed again during the interval. After this, we may take the assistance of the pains in delivering the hips and body of the child; cautiously extracting during the pains from side to side, and from pubes to sacrum. As the hips are brought down, carefully consider again how the child lies in the womb; with its belly to the belly or back of the mother; and take care, if it shall be necessary, to turn it gradually, so that by the time it shall be delivered as far as the arm pits, the belly of the child shall certainly be to the back of the mother, which is the position in which the arms and head can be most easily delivered. And now, or rather somewhat before this, examine the navel string and occasionally pull it down a little, so as to prevent its being put on the stretch. If the pulse in the navel string be strong, and the hæmorrhage suspended, we may still proceed with deliberation, and take the assistance of the pains in accomplishing the delivery. But if the pulsation has ceased in the cord, or if the woman floods freely, either the child or the mother may be lost by delay; and it becomes necessary to finish the delivery as soon as we prudently can. If therefore, the child's arms make any resistance, introduce one finger under the pubes, and carrying it along the child's arm to the elbow pull that down a little, then go on to the wrist, it will easily turn down into the hollow of the sacrum and be delivered; the other arm will be still more easily delivered in the same way. But let it always be remembered, that caution and dexterity are more necessary than force; by which, unskilfully applied, there will be great danger of breaking the child's arms. Having delivered the arms, lay the body of the child on your left arm, and passing two fingers of that hand into the vagina,

introduce them into the child's mouth, and draw the lower jaw down a little, so that, if possible, you may extend the fingers above the mouth along the child's nose; then placing the fingers of the right-hand across the child's neck, again cautiously extract during the pains, sometimes pulling down towards the sacrum, again up toward the pubes, and from side to side; and again pushing down and backwards towards the hollow of the sacrum, so as to free the occiput from the pubes. The chin being brought down as low as the foshette, stand up, and raising the back of the child towards the belly of the mother, the face will turn out from the perinæum, and the delivery be finished.

216. In giving this description, I have purposely supposed the most favourable circumstances that occur in a case of so much importance: the hæmorrhage to be restrained by the introduction of the hand; and the greater part of the waters to be retained by the wrist plugging up the orifice of the womb; that I might describe the successive steps of the operation minutely and distinctly: but we must not flatter ourselves, that this will generally, or even frequently, be the case. There are few situations of greater terror or alarm, than a woman flooding at the latter end of pregnancy; and we are frequently called on to decide instantly, and to act promptly; yet we must never suffer ourselves to be confused or hurried: for even during the operation, many occurrences may happen, which call as much for cool reflection, as for prompt and ready execution. Of these I shall take notice in describing those preternatural cases in which they are most likely to occur. In many of these cases, women are so much exhausted by loss of blood, that even after a safe delivery, they require great attention to recruit their strength and save their lives. Rest,

promoted by small anodynes, in some cordial julap, such as spiritous cinnamon water, or what can always be had, good toddy with nutmeg, are the remedies first called for: these must be succeeded by small portions of nourishing diet, frequently repeated, and by tonics, of which an infusion of the Peruvian bark and cinnamon in claret agreeably sweetened, makes a pleasant and efficacious formula. The placenta is never to be hurried.

SECTION V.

Preternatural Labours.

217. Preternatural labours, are all those in which the body of the child is delivered before the head. In which the feet, knees, or breech of the child present; or in which the child, laying across, presents with the arm, shoulder, thigh, back, or belly. In the first set, in which the feet, knees, or breech of the child present, nature unassisted, or with very little assistance, is frequently equal to the delivery, in well-formed women; and in all in which the child lies across, or presents with the arm, shoulder, thigh, back, or belly, turning the child, and delivering by the feet, the usual mode of assistance, is attended with little difficulty or danger, when performed in proper season, after the parts of the mother are freely dilated, and before the waters of the womb have flowed off: but of great difficulty and proportional danger, when the waters have been

discharged so long as that the womb contracts closely about the body of the child ; and in each, several circumstances are liable to occur, which require particular attention ; and modes of relief somewhat different from those described in the general directions already given, for turning and delivering by the feet.

218. Although a cautious examination, after the internal orifice of the womb be fully dilated, may frequently discover that the presentation is preternatural ; and this is always to be suspected, when no part of the child can be felt ; yet it is not easy to distinguish any one case, from another nearly connected with it, before the breaking of the membranes : after which, the presenting part falling down into the vagina, may be known—the feet from the hands, by the shortness of the toes, compared with the length of the fingers ; by the great toe longer and the thumb shorter than the others ; by the heel compared with the wrist : the right hand from the left, by shaking hands with the foetus, and observing the situation of the thumb. The breech is known by the softness of the feel, by the chink between the buttocks, by the anus or privates of the child, and by the discharge of the black stools, accompanying the other signs ; for alone this is no proof of a preternatural presentation. The belly and breast are known by the broad and flat surface, presenting neither the roundness nor hardness of the head, nor the other circumstances which accompany the breech presentation ; the belly is distinguished from either, by the greater softness of the feel, but more certainly by the navel string, which commonly falls down into the vagina before it.

219. In pointing out these distinctions however, I take it for granted that the accoucheur is present

from the first ; and not that he is called in to repair the blunders of those who have preceded him ; and by rude and improper handling have so irritated, inflamed, and bruised the parts, that they are swollen out of all shape, and it has become impossible to distinguish one from the other. In such a case, it may be impossible to ascertain the presentation, before the whole hand be introduced into the vagina or womb.

220. In the cases in which the feet and knees present, no assistance at all is necessary, nor should any be given, until the child be delivered as far as the hips ; because these parts being small, will frequently descend into the vagina, and even through the external orifice, before the vagina, external, or even the internal orifice shall be sufficiently relaxed and dilated, to permit the hips and body to pass without injury. It is therefore hardly necessary to caution the midwife to be particularly careful, before she makes use of any force in extracting, to distinguish the foot from a hand ; because every, the slightest degree of force applied to the hand, will inevitably do mischief, and render the case more difficult ; but if she wait until the part be actually without the os externum, it is impossible to mistake one for the other. In the early period of these labours, neither the woman nor child are in any danger ; the labour therefore should be allowed to proceed slowly, and the natural pains to produce their full effect, in dilating the parts, as well as in protruding the child. When the child shall have advanced as far as the hips, we are then to consider how it lies in the womb, and if it shall be necessary, begin during every pain to turn it a little, so that the fore-part of the child shall be to the back of the mother, by the time it becomes necessary to deliver the arms and

head; we are then to proceed, in all respects as in the case of a child turned in the womb.

221. *The breech* may in general, be likewise left to nature, until the hips shall be delivered: this species of labour is apt to proceed very slowly, especially during the first period, from the size of the presenting part; all the relaxation therefore that can be procured should be waited for, unless the case be complicated with a descent of the navel string or a flooding; either of which render it necessary to hasten the delivery. This may be done by introducing a finger in each of the child's groins, and giving such assistance as this will enable us to do, during the action of the pains; or the blunt hook may be cautiously introduced into one groin, and a finger into the other; yet this is not free from some hazard of injuring the child, as well in the introduction of the instrument as by the force we may be tempted to use. When therefore it is practicable, it may be found more eligible, to pass a soft fillet between the thighs and the belly of the child, which will afford the means of giving all the assistance necessary and with greater safety: and always remember to extract only during the pains, and to increase the force very gradually; the resistance, which is sometimes very considerable, is best and more safely overcome by time and repeated efforts, than by hurry and violence.

222. If the navel string should be discovered in the vagina, or should protrude the os externum early in the labour, it must be returned; and if possible, pushed up between the child's thighs; this however is not only difficult. but when accomplished, the cord is apt to return and follow the finger to its former situation. All that can be done in this case, is to keep it warm by keeping it within the

vagina. As long as the pulsation is vigorous in it, the child is in no danger; but if it become languid or cease; the delivery must be accomplished as soon as it prudently can be. If the pulsation has ceased for any length of time, and the cord become cold, the child is already lost, and therefore the labour is not to be hurried. Every small show of blood is not to be considered as a flooding, or to occasion any precipitation; on the contrary, a considerable discharge should excite all our exertion, safely to accomplish the delivery; which, after that of the hips, is in all respects, to be conducted as described.

223. *The arm*, after the breech, is the most common presentation of preternatural labours, and very frequently the most difficult; because we are seldom called before the waters have been long discharged, the arm and shoulder forced low down in the pelvis, and the womb contracted long and narrow round the body of the child, with the feet high up in the fundus: all which, the midwife too frequently does what she can to render more difficult, by fruitless efforts to drag the fœtus down by the arm. If we be called early, before the waters have drained off, the sooner we introduce the hand and turn the child the better; but if this favourable period has passed, especially in a strong woman with strong and active pains, it may be necessary to bleed, empty the bowels by simple clysters of warm water, to wait the effect of some time in abating the pains, and even to put an end to them by a large dose of opium, before attempting to introduce the hand; or we may not only be compelled to desist, but may do much injury by fruitless efforts. When it is judged proper to proceed to delivery, we must consider well the situation of the child in utero; distinguish the right hand from the left, and ascer-

tain by the palm to which side, or how the abdomen and back of the child lie. We go up, if possible, with the palm of our hand to the belly of the child; proceed slowly, and dilate the parts as we go on, carefully desisting during the action of every pain. If we find sufficient room, it will be of great use to place the thumb and fingers across the child's shoulder, and push it up before we attempt to secure and bring down the feet: we next attempt to gain the feet, at least one foot, and bring it down into the vagina; then fixing the noose of a fillet over our fingers, again take hold of the foot, and with the fingers of the other hand, get the noose over the child's ankle, and draw the noose tight; then taking hold of both ends of the fillet with one hand, introduce the other into the vagina, and (if we had not done that before) fixing them on the shoulder of the child, push that up, while we bring down the leg by the fillet. All this is to be accomplished by patience, and sometimes by painful efforts. The hand is often so confined and cramped as to be unable to act; and not unfrequently, we find ourselves obliged to withdraw one hand, and introduce the other, before we succeed: and sometimes having secured one leg, we are compelled to bring down the other, before we can turn the child; and now and then it has been found impossible to accomplish the delivery by art; and yet nature, so wonderful are her resources, by what Dr. Denman calls a spontaneous revolution; has succeeded. Of which one instance occurred in my practice, in the wife of a soldier during our revolutionary war.

224. In presentations of the breast, belly, back, and shoulder, or hip, no very precise directions are to be given, as to the manner of conducting the delivery, after we have ascertained the presentation; which it is not always in our power to do, before we

have introduced the hand into the womb. In all these cases therefore, as indeed in every other, after having introduced the hand into the womb, we are to desist, and carefully consider the situation of the child; which having clearly ascertained, the best mode of proceeding will suggest itself to the mind of any person, who is well acquainted with the steps of the operation of turning and delivering by the feet.

225. In all these cases, particularly in a breech presentation, let it be constantly recollected, that there is more danger of lacerating the perinæum, than in a natural labour. In this therefore, the first, and in all the others the last part of the operation is to be conducted with great caution and deliberation, and an assistant may be employed to support the perinæum. And in all cases of particular difficulty, we may facilitate the operation by a judicious choice of the posture of the woman; or by changing it from the side to the back, or from the back to the knees and elbows. Daventer, particularly recommends this posture; and in many cases of difficulty, particularly when the belly hangs much over the pubes, it will be found very convenient, as the head and shoulders of the child are, in this position, most easily pushed back. When the feet are secured, and brought down into the vagina, the woman should again be turned to her side or back. Should the woman faint, during a tedious operation of this kind, instead of being alarmed and desisting, be sure to make use of this season of relaxation to advance the delivery.

226. The *presentation of the navel string*, is by some authors, considered as a preternatural case; and from the imminent danger to which the child is exposed by this accident, we are directed by some to introduce the hand into the womb, turn

the child, and deliver by the feet. But this requires much consideration, or we may frequently expose the mother to great danger, when we cannot possibly save the child. When the cord presents, it always falls down into the vagina as soon as the membranes break; and this is one strong argument against early breaking the membranes, because, until they do break, the child is in no danger; and its life commonly depends upon the most speedy delivery afterwards. Some women are observed to be particularly liable to this accident; in such, every precaution should be recollected, and practised from the beginning. If the pulsation has already ceased in the cord, the child is certainly dead, and therefore the case must be left to nature; or if the cord descend early in the labour, before the os tinæ be dilated, it must likewise be left to nature; because the child will probably die before time can be allowed for a delivery, in which the safety of the mother is duly appreciated: but if the internal orifice be fully dilated, and the case be discovered before the waters have drained off, and the child be living; the hand may be introduced, and the child be delivered by the feet. In performing the operation, take care to carry up the navel string between the fingers of the hand which is introduced; and then, as there will be no danger from its compression, the operation may be performed with due care and deliberation.

227. Some writers mention an *oblique womb*, (by which is understood, the womb ascending into the abdomen, with its fundus more inclined to one side than to the other, or hanging over the pubes) as a frequent cause of difficult labours: but in reality, the distended womb always hangs forward over the pubes, or inclines to one or the other side; and never is so placed, as that a section of the body

through the back-bone, would divide the womb into two equal parts; nor unless the obliquity is very considerable indeed, is it ever observed to occasion any difficulty in labour. When the belly is very pendulous over the pubes, it should be suspended long before labour, by a broad belt; which will take in the bottom of the belly, and which is to be hung by straps over the shoulders; and during labour, the woman should lie chiefly on her back, and be delivered in that posture. When the obliquity is on either side in a considerable degree, the woman should be laid, during labour, on the opposite side; and in most cases this is all that is necessary to be done. But in some extraordinary instances, when the internal orifice of the womb is found very far back, or very much to the side opposite that to which the fundus inclines; and it is in a great measure out of reach of the finger; the child's head is observed to descend, covered by the distended neck of the womb. In this case the woman is to be cautioned against making any voluntary efforts, she is to be carefully kept in a horizontal posture, and the labour is to be suffered to progress slowly. But if at the same time, it be found that no change is made in the position or dilatation of the internal orifice; and the head advance, pushing down and stretching the neck of the womb over it; we may cautiously introduce one or two fingers into the internal orifice, and slowly, but steadily bring it during each pain, towards the centre of the vagina; retaining it in that situation, until it be found to remain and dilate, and the membranes begin to protrude; after which, nothing more will be necessary. By these gentle efforts all the unhappy consequences which have been apprehended from this oblique situation of the womb, such as inflammation, mortification, and the bursting or tearing the neck of the

womb, will be avoided: take care however that by unnecessary interference you do not occasion the very evils you wish to prevent. Nine times out of ten, patience, and a proper posture, will accomplish all that is required.

SECTION VI.

A Retained Placenta.

228. In all the cases here mentioned, and also in the most natural labour, when the child has been most happily delivered; it will sometimes happen, that the delivery of the after-birth does not follow; the pains and the contraction of the womb ceasing altogether; or the womb, contracting irregularly, from its sides instead of the fundus, in the form of an hour-glass, locks up the after-birth within its upper chamber: or the after-birth may be unnaturally attached to the womb.

Having, under these circumstances, waited a due time; and having, ineffectually, put in practice all the means before recommended for recruiting the patient's strength, and exciting the action of the womb, it may at length become necessary to deliver the patient by art: for although, on many occasions, the placenta have been naturally and safely delivered after several days, yet it has so frequently happened, that the woman has lost her life, either by a flooding, or by a malignant fever in consequence of its retention; that it has become an invariable rule,

not to leave the patient until the delivery shall be accomplished. But in giving this opinion, or in describing the manner of performing the operation, I hope I shall give no encouragement to rashness or impatience: let it ever be remembered, that the introduction of the hand into the womb, is always attended with some hazard, and that it is only justifiable when it becomes the lesser evil. No consideration, therefore, of mere expedience, either to gratify the impatience of the patient or her friends, or to relieve the midwife from a tedious attendance, can justify it. Our patient's safety must be the sole consideration; and except in cases of flooding, that is never put to immediate hazard.

229. Fortunately, the introduction of the hand in these cases, often proves the most powerful stimulus to the womb, and immediately excites its contractions: and frequently, nothing more is necessary than using the cord as a conductor, carefully and slowly to pass the hand into the vagina, and thence into the womb. The hand being introduced, if the placenta be still attached, press with the back of the hand against it; or, passing the fingers along the cord to the root where the large vessels divide and enter the placenta, press and endeavour to gather it up between the fingers; which probably will excite the contraction of the womb to throw it off; or if the placenta already lie loose in the cavity of the womb, move the fingers gently against the sides of the womb, to excite its contractions; but never withdraw the hand until the womb be felt to contract upon it; then grasping the loosened placenta, slowly bring it forward.

230. Whenever the womb shall be discovered to be contracted in any part, so as to form two chambers like an hour-glass; nothing more is necessary than slowly and steadily to dilate the contracted

ing; by introducing first one finger, then two, and so on, until it will admit the hand easily: for if the hand be forced through this ring, before the contraction is overcome, it may cling so closely round the wrist as to impede the operation.

231. When it happens that any part of the placenta adheres so firmly, that the contractions of the womb, excited even by the introduction of the hand, will not separate it; it may become necessary, beginning at any part already separated, slowly and gently to insinuate the fingers between the womb and the placenta, so as to detach the remainder; but in doing this let it ever be remembered, that there is no danger in being deliberate, but that every thing is to be apprehended from hurry, confusion, and violence. Even in cases of violent flooding, where it may be necessary immediately to introduce the hand, it must not be suddenly withdrawn, but must be kept in the womb for some time, moving it gently about to excite its contractions; and until they take place, should not be withdrawn. Whilst these attempts are making, the womb must be supported, and its fundus kept steady by an assistant, or by the hand of the operator, which is at liberty; and as soon as the placenta is delivered, the further contraction of the womb is to be excited by frictions and moderate pressure.

232. *Flooding after the birth of the child.* Every woman loses some blood after delivery, in general from half a pound to one pound: how much beyond this is to be deemed excessive, is a question not to be answered with precision; we can only judge from its effects, and the midwife's experience must, in a great measure, be her guide. At any rate, a discharge of blood soon after the birth of the child, though it be considerable, is no argument for immediately, and without consideration, hastening the

delivery of the placenta. Such cases generally arise from an atony (or total inactivity) of the womb, which suffers the large vessels, opening on the placenta, to pour out their contents, for want of that contraction which should close their orifices.

233. Our efforts, therefore, should first be directed to cool the patient when over-heated, by lightening the bed-clothes, letting fresh air into the chamber, and to excite the contraction of the womb by a proper support, and brisk frictions on the abdomen; and by the liberal application of cold, by wet cloths applied to the belly, thighs, and external parts; by dashing cold water smartly on the abdomen, or by throwing it forcibly into the vagina by means of a clyster syringe; or by the introduction of a piece of sponge, wet with cold water, vinegar, or spirits, or a piece of ice or snow into the vagina; or even into the uterus, squeezing out the contents of the sponge within it. In the greater number of cases, such efforts will succeed to bring on the contraction of the womb, by which the placenta will be safely delivered, and the flooding suppressed. But the midwife is, on no account whatever, under the circumstance of a flooding, to attempt to bring away the placenta by pulling at the navel string; by which she will, infallibly, either increase the flooding or invert the womb. It is much safer, when it becomes necessary by the continuance or violence of the flooding, to introduce the hand, and accomplish the delivery, as already directed.

234. It now and then happens, that although there be but little appearance of external hæmorrhage, the woman may still be losing so much blood, as to bring her life into great danger. In such cases, the placenta may commonly be felt at the internal orifice, which it closes so perfectly as to prevent the discharge. An increasing weakness

and faintness, with a pale countenance, a feeble pulse, and at the same time, *an increasing distention of the belly*, mark this dangerous state; which is to be relieved only by speedy delivery.

235. In other cases, a violent hæmorrhage may continue or come on, after the complete and perfect delivery of the placenta. In this most dangerous case, the womb never contracts with much effect, and until it shall, the flooding will continue. All the means, therefore, directed to excite the contractions of the womb, (No. 233) particularly brisk frictions to the belly, and the free application of cold, must be put in practice without hesitation. With this caution, however, that it is in cases of sudden and violent hæmorrhage, cold applications may be used with the greatest freedom; but that, where the hæmorrhage has continued for a long time, and the patient has already been greatly weakened by it; we must be more sparing in their use, and confine their application to the vagina, by the introduction of a sponge, wet with cold water, vinegar, port-wine, or spirits; or if they can be had, a piece of ice or snow, covering the external orifice with a cloth wet with cold water or vinegar; whilst at the same time, the patient's strength is supported by some moderate cordial, a glass of wine, a bit of toasted bread soaked in wine, a little gruel with wine, or any of the cordials mentioned, (No. 17.)

SECTION VII.

Inverted Womb.

236. In this terrible disease, the womb is turned inside out, and the fundus is brought through the internal and external orifice like a purse or bag, of which the bottom is pressed through the mouth. The following cases, which have fallen within my knowledge, will afford some useful observations on this subject.

237. Case 1. A lady, very tall, after a labour rather tedious and severe, was at last, by one long and severe pain, delivered of her second child. On tying the navel string, I observed it to be remarkably thick and very short, and on taking hold of it between my thumb and finger, (for I could not twist it round my finger) I perceived, as I thought, the placenta to be descending; not however by successive pains, but by one continued uninterrupted descent; until it was thrown out of the vagina; and, to my very great astonishment, with it came the whole volume of the womb. It is not easy to express my feelings at that moment; still however, I commanded so much presence of mind, as neither to lose my time nor alarm my patient. The placenta, which was already in part separated, was immediately detached; and my fingers being applied to the fundus of the womb, it was immediately and completely reverted; the hand and arm being introduced as high as the elbow, then slowly withdrawn. No flooding or other ill consequence ensued, and the patient speedily recovered. It was seven years before this lady became again pregnant;

her labour was then natural and happy; she has since had a fourth child, and now enjoys good health.

238. Case 2. The gentleman who communicates to me this case, found the patient in the very last stage of labour; standing, supported by her friends, in a very awkward posture, between upright and recumbent. The child was born in this posture, immediately after he entered the room; the navel string was wound round the neck, and the greater part of the placenta protruded the external orifice, slightly adhering to the fundus of the womb, which was found very low down in the vagina: no flooding ensued. The case being perfectly new to the physician, he contented himself with gently pushing up the fundus as high as he could with his fingers; and ordering himself to be sent for in case of flooding or any unusual occurrence, he went home to reflect upon it. In about eight or ten hours, the husband called on him in great agitation, and informed him, that a substance as large as an ox's bladder blown up, had come out of the vagina. In this situation he found his patient, with very little hæmorrhage, but very faint, and a pulse not to be felt at the wrists. He immediately grasped the womb with both hands, and compressed it until he could grasp it with one, then with the fingers of the other, he pushed the fundus through the external and internal orifices, pursuing it until he had restored it to its natural situation; and letting his hand remain until the womb contracted about it, then gently withdrew it. The faintness immediately went off, the pulse returned, and the patient had a quick and good getting up. It is now nine years since this happened, the woman has since enjoyed good health, her menstruation has been regular and moderate, but she has never since been pregnant.

239. Case 3. A lady, after a labour rather severe, was delivered of her first child; the placenta did not follow in less than two hours, and was then delivered with so much pain, that from that circumstance, as well as from what followed, there is reason to believe much mismanagement occurred. From some time before the delivery, a suppression of urine took place, which continued unrelieved above three days, during all which time, in addition to much pain, she complained of a continual nisus, as if something was to come away. On the fourth day, while sitting on the pan, and endeavouring to pass her urine, the whole womb was suddenly thrown out of the vagina. It was eight or ten hours before medical assistance could be procured; but in the mean time, the nurse, a prudent and experienced woman, grasped the womb and endeavoured to replace it; and actually saved her patient's life, by preventing the midwife from rudely attempting to bring it away; which she insisted on doing, asserting it to be a part of the placenta left behind. By the time the physician arrived, the nurse had so far succeeded, as to replace the womb within the vagina; the urine was immediately drawn off by the catheter, but it was then found to be impossible to revert the womb. For upwards of thirty years, this lady remained subject to profuse hæmorrhages, and consequently endured a very feeble state of health, but has survived until the menses have ceased, and now enjoys a perfect state of health.

240. Case 4. A lady, after a labour in all respects perfectly natural, was delivered of her fourth child on Sunday. The gentleman who attended, has assured me that no force was applied to the navel string, but that the placenta was delivered by the natural pains: on examining after the deliverance, he discovered a tumour in the vagina, the

nature of which did not immediately occur to him; a slight convulsion and a considerable hæmorrhage ensued, but soon ceased. Apprehensive of renewing the hæmorrhage, no further examination was made, and the lady was put to bed, apparently as well as she usually had been. The usual after-pains followed; in addition to which, on Tuesday night she complained of much uneasiness, and a feeling, as she expressed, as if something wanted to come away: and Wednesday morning, after a throe a little more severe, the womb was protruded from the vagina, as large as a pint decanter; and resisted every attempt that was made to replace it. I saw the patient at noon of the same day, after which, such attempts as were thought justifiable, were again made to revert the womb, and persisted in above an hour, in all the variety that could be devised, but without any sensible effect. An emollient fomentation was then directed; and the protruded womb was ordered to be covered with a piece of fine linen, spread with simple ointment, and to be suspended by a T bandage; the bowels to be kept open, the bladder empty, and every means to avoid inflammation to be strictly pursued. After this, two women, who both professed to have seen and relieved similar cases, were successively applied to; and both appeared to have treated the complaint very properly, with soft emollient applications; and the last particularly, to have persevered with great attention and tenderness. Under this management, the protruded womb gradually diminished in size, and after seven or eight days, that is, on the Tuesday or Wednesday following, with very little assistance, was suddenly retracted from the hand into the vagina.

241. From these cases, we may deduce some very useful lessons. It is evident, that in the first

case I mistook the inverting womb for the natural descent of the placenta. Dr. Denman remarks upon a similar case, that the accoucheur ought to have known better; and perhaps, had I examined the abdomen over the pubes, I might have suspected what was going on; by the absence of the round tumour which is usually felt there, and by discovering, in place of it, an evident hollow. In that case, instead of promoting the delivery of the placenta, I ought to have desisted; to have examined by the vagina, which would have ascertained the case, and the womb might then have been reverted before the inversion was completed; which unquestionably would have been an easier and a safer operation, than what I was afterwards obliged to perform. The same observation may be made on the second and third cases: had the nature of the tumours, discovered in the vagina, been understood, both wombs might have been immediately reverted. But a still more important lesson may be learned from these cases: which is, that if a spontaneous inversion of the womb cannot (as Dr. Denman seems to believe) happen without undue force applied to the cord; yet it may commence from other causes, such as a very short navel string, or one twisted round the child's neck; and that a very slight additional force, especially when aided by an improper posture, or even a distended bladder, may complete the inversion. Hence we derive an additional argument for always delivering a woman in a horizontal posture, and never applying any force at all to the navel string, until we are satisfied of the due and natural contraction of the womb, by feeling it, in the form of a firm ball, above the pubes. From the second, third, and fourth cases, we learn, that a partial inversion of the womb having taken place, if it be not immediately reverted, a total inversion will probably

ensue ; partly perhaps from the continued action of the womb, but most probably from that of the abdominal muscles, brought on by the pain and uneasiness the patient suffers : hence the great importance of the rule, immediately to revert the womb, and restore it to its natural situation, as soon as the complaint is discovered. It is hardly possible to mistake any other tumour existing in the vagina, for an inverted womb ; nor can any danger arise from such mistake ; but the most unhappy consequences, even immediate death, has followed, from having mistaken an inverted womb for a tumour of another kind, and endeavouring to extract it. Dr. Denman informs us, that he never was able to revert and replace the womb, when it had been inverted above four hours ; and he adds the testimony of Dr. Hunter and Dr. Ford, to the same fact : but in the second case here enumerated, we have a happy instance of the reversion being accomplished after eight hours ; that too, in a case of total inversion. We are not, therefore, to despair ; but in all cases, carefully to attempt to replace the womb ; still, however, these attempts are to be made with great caution and much tenderness, lest by rude efforts, we bring on inflammation, increase the present danger, or add greatly to the future misery of the patient ; by preventing that spontaneous contraction of the womb, which, from the third and fourth cases, we have reason to expect ; and by which, after several days, we find the womb may be replaced within the vagina. Lastly, we learn that even a total inversion may be easily reduced, when immediately attempted ; and that the parts, though greatly injured, will at length recover a healthy state, so that the woman may again become a mother ; that a violent hæmorrhage, so far from being a necessary consequence of a total inversion.

most probably, according to a remark of Dr. Hamilton, is not very likely to happen; and, therefore, that we may take time to act with coolness and composure, so as to accomplish the reduction safely and perfectly. We are likewise led to question the propriety of the rule hitherto given, not to separate the placenta before having reverted the womb. The only reason for this maxim, is the apprehension of a flooding; but if a flooding be not likely to ensue after a complete inversion, as most of the cases seem to prove, then the placenta should be first separated, which will facilitate the replacement of the womb. Partial inversions, however, seem generally to be attended by flooding; in such, therefore, the womb should be reverted before the placenta be separated.

242. The means by which these alarming, and too frequently fatal accidents, may very generally be prevented, have been already more than once pointed out; but they cannot be too frequently repeated. Keep your patient's mind calm, and her person cool, from the beginning of labour; carefully avoid all unnecessary fatigue, and every kind of heating food and drink; suffer the labour to proceed with as little *interference* as possible; check all impatience in your patient, and most carefully guard against any in yourself: and when, at last, the delivery comes on, so far from hastening it, if the pains be strong and the advance of the child rapid, prudently retard it; and carefully avoid the application of any force to the navel string, or even to encourage in the woman any efforts to expel it, until the womb can be felt contracted like a ball above the pubes. In a labour so conducted, nature will conquer most difficulties, and after it, these untoward accidents seldom or never occur.

SECTION VIII.

On the Use of Instruments.

242. The last resource of the art of midwifery consists in the use of instruments, by which it is acknowledged, that, in the hands of cautious, humane, and skilful men, many lives both of women and children have been saved. But it is a melancholy fact, confessed by all men of experience, and by the greatest improvers of this art, that in the hands of the inexperienced, unskilful, and rash practitioner, many, many more, have been sacrificed. Insomuch that even Baudelocque, one of the greatest advocates for the forceps, confesses, that "he is not very far from believing that this gentlest, as he calls it, of instruments, has been more fatal, than useful to society; that the forceps have destroyed more than they have saved." This was unquestionably much more generally the case (in proportion to the numbers who used them) soon after their invention, than it is now: and it is much more generally the case at present in this country than it is in Europe; particularly in England; where their use is much better understood; and where their best writers allow, that the greatest improvement in the practice of midwifery of the present age, is the disuse of all instruments, compared with the frequent use made of them, at no very distant period.

243. What then shall we say? would not the cause of humanity be served, if their use could be altogether proscribed? I have no doubt in answering this question, as it respects the present state of the art, and general practice in this country: but

even if it were desirable, it is not possible. These instruments are in the hands of almost all practitioners; some build their reputation on their dexterity in using them; and too many know only the use of the most dangerous and destructive, the scissors and crotchet: by which thousands of infants have been unnecessarily destroyed. This may be thought a harsh and inconsiderate assertion, but when I assure the reader; that one practitioner of a country village has confessed, indeed boasted to me, that he had used the scissors and crotchet seven times, and consequently destroyed as many infants, in a practice of about eight or ten years; it may not appear to exceed the truth. Our only remedy therefore, for this dreadful evil, is to give correct views of the subject; to diffuse knowledge; to inculcate better principles, more caution, more humanity, more patience; and a greater reliance on the efforts and resources of nature.

245. The instruments now in use, are the scissors and crotchet; the forceps, and the lever or vectis. The first is an improvement upon instruments of a very early date, invented for opening the child's head, and by evacuating the brain, lessening its size; solely with intention to save the mother's life. The forceps were invented as an improvement on the crotchet, with a view to save the life of the child, at the same time that it preserves that of the mother: and as improved by Dr. Smellie, is well adapted to this purpose. It was soon discovered, that frequently it became impossible to introduce both blades of the forceps; and that on these occasions, one blade was generally found sufficient to accomplish all that was expected from both. This gave origin to the vectis or lever, as more simple, and more easy and safe in its application: and this instrument after having had its shape frequent-

ly varied, from some fancied improvement, has now again returned very nearly to the shape of one blade of the forceps. These are unquestionably real improvements, but a much greater, is the present established opinion, that labour is to be suffered to proceed without interruption, as long as the efforts of nature are conspicuous and regular; and a growing aversion to all interference either by the hand or instruments, but in cases of absolute and unquestionable necessity.

246. The first and most important rule therefore, with regard to the use of any instrument is; that no circumstance of expediency, either to the patient or accoucheur, no confidence in his dexterity, no wish to save time, or to shorten the woman's pains and efforts; can justify the use of any instrument, or any other interference, whilst the labour continues tolerably regular; and the woman's strength is not exhausted: except in some cases of flooding and convulsions, or preternatural presentations; in which immediate delivery may be absolutely necessary. The second is, that in all cases of laborious births, in which any part of the head presents; after the internal orifice be sufficiently dilated, and the head have been stationary for some time in the pelvis, the bones overlapping each other; when in such a case the labour pains have in a great measure ceased, the woman's strength is considerably impaired; and when all the means for recruiting the one, and renewing the other, have proved ineffectual; and when at length we have deliberately concluded on the necessity, and determined on the application of instruments: we are first to try the lever, then the forceps; and if both fail, and not until then, are we to have recourse to the crotchet; except in cases, in which it has

been ascertained, that the pelvis is so deformed and contracted that a living child cannot pass.

247. These instruments are so well known that a particular description of them is unnecessary. I shall only say, that the best forceps are Smellie's short forceps, or one of the same length, with a lateral as well as a direct curve; this is between eleven and twelve inches long; the lever is about the same size, but has only one direct curve. Ever since its first introduction, its reputation has been gradually increasing, and its application extending, to a greater variety of cases; insomuch that in England, it has at length overcome all opposition; no man there pretends to practice midwifery who is unacquainted with its use; all who have used it, for any length of time, have become more and more attached to it; and many of the first practitioners in London of this day prefer it in most, and assert it to be applicable in all cases, in which the forceps can be used with advantage.

248. Both vectis and forceps are intended to supply the defect of pains, and to make up for the want of strength in the woman to accomplish her own delivery. Yet when a woman has been imprudently fatigued, and mismanaged, so as to appear very much exhausted; her strength may very frequently be recruited by rest, and nourishment: and sometimes when the pains have suddenly ceased, from alarm or any other accident, the woman being properly consoled and reanimated, they will return with sufficient vigour: all the means therefore by which these salutary ends can be accomplished, among which the Ergot may now probably be enumerated, are first to be tried, before we have recourse to either.

249. Again, neither are to be applied, until the child's head has in a great measure passed the

superior strait of the pelvis, and descended so low, as that it begins to rest on the perinaeum; so that the ear of the child can be felt; in which case there either exists no considerable disproportion between the head of the child and the pelvis; or what is in effect the same, the labour pains have already moulded and compressed the child's head so, that at least with some little assistance it can pass. For we are never to calculate on lessening the diameter of the child's head by any compression with the forceps. First, because all the compression it can bear, and any reduction of diameter thence resulting, will be much more safely effected by the slow and gradual operation of the labour pains, than it possibly can be by any instrument. And secondly, that it is confessed by the advocates of the forceps; that a child's head cannot be compressed above three or four tenths of an inch by the forceps; and that if it could, such compression would destroy the child. Yet of these three or four tenths, the blades of the forceps occupy at least three; so that the utmost that could in this way be gained, would be one tenth of an inch. Whilst by the labour pains, the compression may be, and frequently is, carried so far as to reduce it five or six tenths, and that without any deduction, or danger: because, in passing a narrow pelvis, by the force of the labour pains, the head is not only compressed very slowly; but at the same time that it is contracted in one diameter it is lengthened in another; so that nearly the same space is left to be occupied by the brain as before: but the very form of the forceps resists this elongation of the vertex, which alone can render the compression safe.

250. These considerations in a great measure limit the power of the forceps, to the aid they may afford in altering the position of the child's head.

and promoting its expulsion by the power of extraction; but experience has proved that in these respects the lever is nearly if not altogether upon a par with them; and therefore as it is of easier application, and in all respects safer both to the mother and child, it is now preferred by all practitioners who are acquainted with its use.

251. The cases in which either are called for, are all those laborious births, in which the child's head enters the pelvis, so as to present its longest diameter, more or less to the shortest diameter of the pelvis; and thence creates an obstacle, or obstacles, to its descent, greater than the labour pains can overcome: or those in which there exists such a disproportion between the size of the head and the diameters of the pelvis, as that the diminution, which may be expected from the labour pains, cannot altogether compensate: or lastly, those in which the child's head has descended so low, as to be almost ready to be born, and a flooding or convulsions coming on, render immediate delivery absolutely necessary.

252. Our success depends, first, on patiently waiting until nature has performed her part of the operation: which we cannot say is the case as long as she is able to make any considerable effort. Secondly, on a thorough knowledge of the cause of the impediment; which is to be obtained only by a degree of skill and accuracy in touching, to be acquired by experience alone: and lastly, by greatest caution and deliberation in the application and use of the instruments.

The manner of using the Lever.

253. The woman being laid in the posture, and the bed prepared as directed in preternatural la-

bours; introduce two fingers of either hand into the vagina, over that ear of the child which lies below and nearest the pubes: then taking the lever in the other hand, pass the blade between the palm and the child's head, until it reach the ear; then by gently raising and depressing the point of the instrument, by turning the sides alternately to and from the child's head, and if it meet with any impediment, partly withdrawing it and again pressing it forward, until it be overcome; carefully pass the point over the ear, and through the os internum, so high up as that the handle reach the vulva, when the point will have passed over the cheek of the child, as far as, or a little beyond the chin. These attempts will probably renew the pains, although they shall have ceased long before; of this circumstance we are to take advantage, pressing forward the instrument during the intermission of the pains; and having fully introduced it, and properly fixed it, endeavouring to aid the pains while they exist, and resting again during their intermission. The manner of acting is to place the edge of the palm of the left hand upon the lever, close to the pubes; and with the right to raise the handle of the instrument slowly, but firmly; so that whilst that part of the instrument, on which the left hand rests, acts against it, as against a fulcrum; the blade may press the child's head backwards and downwards, into the hollow of the sacrum; and at the same time add considerably to the propelling force of the pains. When there are no pains, we are to imitate them by raising and resting alternately. You will not have continued long to do so, before the head will begin to descend; and as it descends, it will make the necessary turns in the pelvis, until the vertex shall be brought under the pubes, and the forehead begin to distend the perinaeum; to protect which, we

must now proceed with greater caution and deliberation, supporting the perinæum, if the pains be strong, with our left hand; if not, getting an assistant to do so, whilst we manage the instrument, so as to promote the expulsion of the head.

254. A thorough knowledge of the position of the head, and of the nature of the impediment to its descent, will enable us to direct our efforts with more precision and effect; and consequently to advance the labour more easily and more speedily: but such accurate knowledge can only be acquired by long practice, and some doubt and obscurity will frequently rest on the conclusions of the most experienced. It fortunately happens however, that nature, if we do not actually prevent her, will accomplish the necessary turns without our aid, if we can only promote the descent of the head: to this, therefore, our efforts, particularly in the commencement of our practice, must be confined; and if we be only careful, by slow, cautious, and steady efforts to do no harm, we may do much good, with little hazard; experience alone can enable us to act with great effect, and at the same time with security.

Of the Forceps.

255. If there be any cases in which the forceps are to be preferred to the lever; they are those, in which a flooding or convulsions coming on towards the end of labour, when the pains have relaxed, and the woman's strength is so far exhausted, as that we have reason to apprehend the labour will not be terminated so speedily as may be necessary to save her life. Having then determined on their use; the woman's posture, as well as the manner of introducing the first blade of the forceps, are in all

respects the same as described for the application of the lever. This being accomplished, the fingers of the other hand are to be introduced over the opposite ear of the child; and the second blade of the forceps, (taking care to place it above or below the first, so that when introduced they may be locked,) is to be passed between the palm and the head of the child; and carefully and slowly pressed up, until the parts which lock are brought together near the vulva, and easily fall into each other. The facility of locking them will depend upon the two blades being placed precisely opposite, and should this not be the case, one or the other is to be partly withdrawn, and again introduced; so changing the direction, as to bring them opposite to each other: for if you attempt to act with them, before they can be firmly locked, you may depend on their slipping their hold; and if you attempt to do that by force, which you ought to do by dexterity, you will injure either the mother or the child. Having locked the blades, and brought the handles nearly together, it is usual and proper to secure them by a riband or tape tied round them, to give them a firm hold of the head, but not unnecessarily to compress it.

256. We act with the forceps as with the lever; slowly but steadily raising the handles towards the pubes, then again depressing them in the same cautious manner; and at the same time, extracting with a moderate force, until the handles reach the perinæum; taking advantage of the pains, and making our efforts conspire with them, when they are present: and when the woman has no pains, imitating them by acting and resting alternately and slowly. As soon as the head begins to descend, it will at the same time begin to turn, (without any effort of ours,) so as at last to place the forehead in the hollow of the sacrum, and the vertex under the

pubes: and this will necessarily change the direction of the blades; so that whereas, one was at first placed under the pubes, and the other in the hollow of the sacrum; they will at last, when the head has passed the brim of the pelvis, and begins to stretch the perinæum, be found from side to side. This continual change in the position of the blades of the forceps, must not be resisted, and must be attentively observed; that we may vary our action, so as to give it at every stage the direction of the blades. Smellie, and all who have followed him, direct us to effect this change in the position of the head by our own efforts, whilst we extract. But if we do not resist it, nature will accomplish this without our aid; and far better than we can do: as she will always accommodate the degree in which the head shall turn, to the depth to which it shall have descended.

257. During all this time of the head's descent, which in imitation of nature should be very slow and gradual; we must terminate each action, and make the extraction in the direction of the axis of the pelvis, at first with the handles far back towards the perinæum: and as the head descends, each time we act, we raise the handles a little; so that by the time the perinæum begins to be put on the stretch, we extract in the direction of the axis of the vagina. And at last, while we carefully support the perinæum, we raise the handles over the pubes towards the woman's belly; by which the child's chin will be brought out from under the perinæum, and the head will be born.

Of the Crotchet.

258. By the use of this instrument the child is necessarily destroyed: it is therefore our last re-

source, and to be used only in cases which cannot be delivered, either by giving time to the efforts of nature, or by calling to our aid the lever or forceps. These are very few indeed, and confined absolutely to the case of a pelvis so contracted, as that a living child cannot pass through it; or of a head so enlarged by disease that it cannot pass through one that is well formed. To prevent therefore, an inexcusable perseverance in error, let every one who is in the habit of using this instrument, test his practice, by the future labours of the same woman; and if she bring forth a living child at full time, after having, in a former case, been delivered by the crotchet, let him be assured that in the first it was unnecessary, and let him repent, and amend his practice in future. A woman, who had been delivered of her first child by the crotchet, and in four successive labours by the forceps, was about two years ago safely delivered of a living child, at full time, by the natural pains of labour: and again, within the last ten weeks, bore a very large healthy child, without any other assistance. The reflections of her former attendants, particularly of the first, cannot be very pleasant, when informed of these events.

259. The ordinary size of a well-formed pelvis, across the short diameter, is four inches: in such the angle of the sacrum can hardly be reached by the finger pushed backwards and upwards from under the pubes. But when the pelvis is contracted one half or three quarters of an inch in this diameter, the jutting in of the sacrum can easily be reached: yet through such a pelvis, a living child will generally pass, if the labour be well managed from the beginning. After the child's head has entered the brim of the pelvis, the angle of the sacrum cannot be easily felt; but if you can introduce your finger and carry it all round the child's

head, can feel the ear, and distinguish the sutures, you may be sure the pelvis is not contracted; but that any delay which may occur in the labour, is owing to some other cause; and if on inquiry the woman be found to have ever brought forth a living child, there can be no necessity, from the narrowness of the pelvis, for the application of the crotchet.

260. It is in cases of first children, in strong women, a little advanced in life, that this precipitate and unwarrantable use has been made of the crotchet, by practitioners ignorant of the resources of nature; too soon alarmed for their patients' safety, or criminally impatient on their own account. No one who has not witnessed it, can easily conceive what women sometimes undergo in these cases; and still at length, become the joyful mothers of living children, and recover as from easy and natural labours. Many cases of this nature are recorded, in which five, six, eight, or ten days have been required to accomplish the delivery with safety to the mother and child. Time alone therefore, is no argument for interference.

261. It is not denied however, but that cases may, and do happen, of women who cannot bring a full grown child alive; and in such, when suffered to go their full time, we are reduced to the necessity of using the crotchet, or performing the Cæsarian operation; and where the necessity for one or the other is apparent, there can be no hesitation in giving the preference to the crotchet. When therefore, this is known to be the case beforehand, or when after leaving the woman for a sufficient length of time, to her own natural efforts; giving to them every prudent and necessary aid, waiting patiently for their effects, as long as the pains continue, or the woman's strength will permit;

after every proper inquiry and careful examination, we become satisfied of the necessity of the case; we are unquestionably justified in endeavouring to save the life of the mother, at the expense of that of her offspring. Yet this should never be undertaken, but with the consent and approbation of a fellow practitioner, after a solemn and serious consultation.

262. In this case, the woman being placed on her back, as directed for the application of the lever and forceps; the fingers of the left hand being introduced into the vagina, and fixed on the presenting part of the child's head; the perforating scissors are then introduced within the palm, and between the fingers; and piercing the scalp to the skull, the bones are perforated by a boring motion, until the scissors reach the projecting stops on their edge; they are then to be opened in one direction; and turning them half round, (the joints guarded by the fingers of the left hand) they are to be closed, and opened again in the opposite direction; and again turned round, so as to destroy the texture of the brain: then being closed with the same care not to entangle any of the soft parts of the mother; they may be withdrawn. Some time is now to be allowed for the woman to rest; and for the pains, if they still continue, to produce their effect, in discharging the brain, and lessening the diameter of the head.

263. This being effected we next endeavour to remove any rugged edges of bone which might injure the mother; and then passing one or two fingers within the skull, and taking hold at the edges of the perforation, we may endeavour, in that way, to assist the pains in forwarding the birth. But in a necessary and justifiable crotchet case, we shall be able to make but little progress in this way; and we shall find it necessary again to fix the fingers

of the left hand over the opening in the skull, and between them to introduce the crotchet within: then fixing the point on some of the bones, of which the os petrosum will afford the strongest hold; with the left hand so placed within the vagina, and the fingers so spread on the child's head, as that the point of the instrument, should it slip, will rather strike the palm or fingers, than the parts of the mother; we exert as much force, (gradually increasing it) in extracting, as the parts will bear: and should they give way, the instrument is to be fixed again on another part, or on the outside of the head, in the eye, under the jaw, or behind the ear; and varying the direction of the extracting force, as far back as possible, from side to side, or directly forward; endeavour to bring the head through the contracted pelvis. If we again fail, both hooks may be fixed, one on each side of the head, by which as much force may be exerted, as can be necessary, or as the parts will bear: nor is it easy to conceive how much force, or how tedious and fatiguing an exertion is sometimes required. All however, is to be done deliberately, slowly, and cautiously; resting ourselves, and allowing the patient to rest, and from time to time, to receive some mild cordial nourishment: haste is seldom necessary, and although we may wish the delivery accomplished as soon as possible, we must never be hurried.

264. Having delivered the head, a cloth is to be wrapped round it, or a handkerchief round the neck; by which we may make use of as much force as we dare, without risking the separation of the neck from the trunk. And if even with this we do not succeed to bring down the shoulders and breast; which in a very narrow pelvis will sometimes be the case, we are again compelled to have recourse to the crotchet, to fix it in the arm pits, or to tear open

the chest, or the abdomen, when swelled in consequence of putrefaction; which, in a child long dead, is frequently the case.

265. This, as well as that in which the child's head may be enlarged by disease, particularly the hydrocephalus, are cases in which the crotchet may be required, even in a woman with a well-formed pelvis. The hydrocephalus may be suspected, when in the beginning of labour the child's head readily recedes from the touch, floating as it were back in the waters of the womb; or where, in a well-formed pelvis, the head remains a long time above the brim without engaging in it, notwithstanding active pains; and at the same time, we can discover the sutures and fontanelles very largely open, and the bones easily moved on each other. Yet so much uncertainty always attends this conjecture, even in a person of considerable experience, that it becomes our duty to wait as long as the pains continue regular, and the woman's strength be not greatly impaired. It will generally happen that the expediency of introducing the hand, and delivering by the feet, with the hope of saving the child, will occur before we have recourse to the last remedy: this will put it in our power to examine carefully the nature of the case, and to ascertain what it is, which obstructs the labour. If the head be not found very large, nor the pelvis very narrow, it may be proper to proceed and deliver by the feet; but if the head be found very large and hydrocephalic, the chance of saving the child will be so little, and perforating the head, in this case, so easy and safe, that that may be most justifiable. The perforation in this case is generally all that is necessary; as soon as the waters shall be discharged the head will collapse, and the labour may then be left to nature.

266. The death of the child, when that can be ascertained, removes every objection to the use of the crotchet, when otherwise necessary. But of this there is but one real evidence; that is the separation of the cuticle from those parts of the child, which can be felt. Neither coldness of the abdomen, disappearance of the milk, cessation of motion for any length of time, nor even putrid and offensive discharges from the womb, are to be depended on. But the peeling off of the scarf-skin is unequivocal, and is sometimes attended with such a distention of the cavities from extricated air, as to render it necessary to open them before the child can be born; and for this purpose the scissors and crotchet are the most convenient instruments.

CHAPTER V.

OF THE DISEASES OF WOMEN IN CHILD-BED, AND
OF INFANTS DURING THE MONTH.



SECTION I.

Child-Bed.

267. AMONG savages and half-civilized nations, women make little or no change in their general conduct, in consequence of child-birth; but return to their usual occupations, almost immediately after delivery. Even among us, the more hardy individuals of the labouring women, submit to a very short confinement: nor is it now so general among the higher classes of society, to be confined to bed for eight or ten days, and to be restricted to a particular regimen for a much longer time, as it formerly was. I believe, in so doing, they are approaching to a wiser and more natural conduct. But nevertheless, women are not to lay aside all attention to their situation, at this time. During labour, they undergo great changes, generally suffer much pain and fatigue, as well as great evacuations: by which, their strength must necessarily be reduced.

and their frames become more irritable and susceptible of disease: consequently, there must be more hazard from every kind of exposure and error. Whilst the womb, too, is returning to the unimpregnated state, they are exposed to some complaints which require attention; and this attention must always be in proportion to the former habits of the woman, as well as to her general health and strength, and to the fatigue and distress she has undergone in her labour.

268. The first requisite is to change the woman's posture, and to regulate her bed; which, when she has been greatly exhausted, should not be attempted for some hours; at least, no more should immediately be done, than to put dry clothes under her, extend her limbs, and perhaps turn her on her back, or on the other side; give her some mild cordial nourishment, such as gruel or panada, with a little wine, and if she complain of much pain, twenty-five or thirty drops of laudanum. As soon as she is properly recruited, the opposite side of the bed being prepared, she may be removed to it; or if she had been delivered on a cot, that being brought to the side of the bed, she may be carefully removed from one to the other; taking care not to suffer her to rise to an erect posture immediately after even the most favourable labour; by which she may be exposed to some troublesome complaints, and from which circumstance alone, many women have fainted, and some have lost their lives. If the bed has been properly prepared before, and proper care has been taken during labour, it will be no difficult matter to keep the woman clean and dry, which are circumstances very necessary to be attended to throughout her confinement.

269. A very strict, though a very different regi-

men has been directed by different authors, for child-bed women. Some, under the idea of the weakened state of their patients, have ordered a warm, cordial, stimulating diet; whilst others, from apprehension of fever, have restricted them to one that is very low and abstemious. But all general rules on this subject, except that the diet should be temperate, are liable to error. In ordinary cases, common food, avoiding gross meats and spiritous liquors, may be moderately indulged in; to such as are much reduced, some wine and light animal food should be allowed; while such as are more robust and of inflammatory habits, should avoid animal food, and cordials of all kinds; and restrict themselves, for some days at least, to tea, gruel, &c. Whenever it can be procured, good ripe fruit may be taken freely; heated rooms, a load of bed-clothes, and close confined air, are always prejudicial.

270. *Evacuations.* Upon the supposition that the advice already given, with regard to the state of the bowels, before and during labour, has been attended to; it is most probable that in this respect, there will be no occasion for the interposition of art, at least for one or two days; but the state of the bladder must always be attended to from the first; and unless the woman pass her urine at least twice in twenty-four hours, it must be promoted by injections of warm water, and by fomentations externally applied, which are most conveniently made by an ox's bladder, half filled with warm water. If these means should not succeed, and the bladder become distended and painful, recourse must be had to the catheter. These attentions become most necessary, in those cases in which women have not been able to discharge their urine for some hours before delivery; and if, within twenty-four or thirty-six

hours, they have no evacuation from the bowels, a few stools should be procured by castor-oil, or magnesia.

271. *After-pains.* Pains in the belly which come on and go off like labour pains, which leave the belly without soreness, and are frequently succeeded by the discharge of small clots of blood from the womb, are more or less common after most labours. These are called after-pains, are generally less severe after a first labour, always so after a slow labour, that has been well conducted; in which the delivery of the head, shoulders, and hips of the child, have succeeded each other after short intervals; and that of the placenta has not been hurried, but left to the natural pains. When moderate, they should not be interfered with, as they arise from the natural contractions of the womb, expelling small clots of blood which remain in its cavity; or in the orifices of the enlarged veins, that terminate on that part of its surface to which the after-birth had been attached. When severe, they will be mitigated by a bladder of warm water applied to the abdomen, or by an anodyne of thirty or forty drops of laudanum, or the sudorific draught, (No. 12. b.) promoting its effects by tepid drinks, such as balm or weak catnep tea. The too common practice of giving, on this occasion, spiritous liquors, hot spices, and strong infusions of sage and pennyroyal, is not only unnecessary, but really dangerous.

272. After one or two days, women should rise from their beds, and sit up for a longer or a shorter time, every day, according to their strength and inclination. This change of situation will promote the natural discharges, and, at the same time, greatly refresh the woman; but it is not prudent to indulge in walking about, until the womb and its ligaments have in some measure resumed their

natural size and situation. It is impossible to fix any period when this will be accomplished; but unquestionably, weakly women must submit to a longer confinement to a horizontal posture, than the more robust: and even these should not stand upright for any length of time, nor walk about for several days.

273. *Lochia*. The natural discharges which flow from the womb after delivery, require no other attention, than sitting up a short time every day, to promote their evacuation, and cleanliness. They commonly suffer a check during the second or third day, when the breasts begin to be distended with milk; but this is a natural occurrence, which need excite no alarm; and they will again flow in a proper quantity, as soon as the slight fever with which the coming of the milk is generally attended, subsides. They flow in a greater or less quantity, according to circumstances of strength and constitution in the patient; and when profuse or obstructed, are symptoms of general health, or particular disease; and as such, will be remedied by the treatment necessary to remove the complaints, of which their profusion or obstruction is the necessary consequence.

274. *Lameness*. It has been already remarked that, in consequence of severe labours, or of previous disease, the junctures of the bones of the pelvis, sometimes so far give way, as to occasion very painful obstinate lameness after delivery. Rest, for a long time in a horizontal posture, frictions with warm liniments, (No. 19.) and after the danger of inflammation has subsided, such remedies as strengthen the constitution, such as the Peruvian bark and chalybeates, and cold bathing, are the proper remedies: during the use of which, the support obtained by the proper application of a bandage, will ever be

found a very useful auxiliary. On other occasions, inflammation may take place on those parts, and may be followed by suppuration, a most dangerous and distressing complaint. Whenever, therefore, a patient, after delivery, complains of pain in those regions, the cause should be carefully inquired into, and immediately attended to: that, by early bleeding and blistering, suppuration, and all its dreadful consequences may, if possible, be prevented.

275. *Soreness and Inflammation of the external parts.* After severe labours, especially when badly managed and rudely treated, the external parts are sometimes abraded, swollen, and inflamed; frequent washing and bathing with warm milk and water, and anointing with a little very fresh hog's lard, in which a small quantity of fresh mutton suet has been melted, or with the simple cerate (No. 18. a.) are in general the best remedies. When the injury has been very great, fomentations and poultices may be necessary. Lacerations of the perinæum seldom require any thing more than these at first; after the inflammation and swelling have subsided, the simple cerate, spread on lint should be applied. Whenever laceration extends into the vagina, besides these applications, a dossil of lint, dipped into melted grease, should be introduced pretty high up the vagina, to prevent the sides adhering. Some attention is necessary to keep the knees together, whilst the wound is uniting; but stitches, in general, do more harm than good.

276. *Prolapsus, or falling down of the womb,* though not always a disease depending on pregnancy, may be a consequence of mismanagement in a former labour, and is always increased during the first month of a succeeding pregnancy. General weakness predisposes to this disease, may be the principal source, and always increases it, from what-

ever other cause it is derived. Great voluntary exertions, and preposterous efforts in the beginning of labour, before the internal orifice of the womb be sufficiently open, may subject any woman to this troublesome complaint; but are most apt to bring it on in such as are of weak and relaxed habits, or in such as have been subject to it before; and therefore, although always wrong, should more carefully be avoided in such cases. In such women as are subject to this complaint, it is always increased during the first three or four months of pregnancy; but as soon as the womb rises out of the pelvis, (that is, after the fourth month) it grows better, and generally disappears by the seventh or eighth month; but after that, may return again in a slight degree. Careful attention, during the succeeding labour, to keep the woman in a horizontal posture, to avoid all voluntary efforts, and unnecessary straining, and to support the internal orifice, by one or two fingers introduced into the vagina, during every pain, will prevent any increase of the complaint at that time; and longer confinement than usual to a horizontal posture, after child-birth, will sometimes entirely remove it. Cleanliness, and washing out the vagina by means of a syringe, at first with milk and water, then with an astringent infusion of green tea, or of oak bark, with the addition of a small quantity of vinegar or spirits, will contribute to the cure; at first, the injections should be tepid, but after eight or ten days, when the irritability of the woman's habit is diminished, when the flow of milk is fully established, and the disposition to chill and fever has subsided, they should be used cold. When the disease is considerable, or proves obstinate, these milder astringents may be changed for the solution of lead, or white vitriol, which are more powerful. When

women begin to rise out of bed, the womb should be supported by a sponge, squeezed out of some of these astringent liquors, introduced into the vagina, and kept there by means of a T bandage and compress; or a small ball of elastic gum moderately distended with cotton, may be used for this purpose; either must be withdrawn, and cleansed two or three times a day. Such means, persisted in with due care, will generally prove effectual; but it sometimes happens, particularly in labouring women, who are compelled to return to their ordinary occupations too soon after delivery; that this complaint, by neglect, acquires a considerable magnitude, and a tendency to inflammation; which, in the first instance, requires only cooling purges, and a spare diet, with emollient fomentations and poultices; until the swelling, pain and inflammation shall be removed, before the womb can be replaced; and after that, besides astringent injections, the use of a pessary, to support it in its natural situation. In very weakly women, remedies, strengthening to the constitution in general, such as the Peruvian bark, and preparations of iron, and the cold bath, either partial or general, must accompany the local applications.

277. *Milk fever.* About the third day after delivery, the breasts become turgid from the milk secreted in them, and at the same time, the uterine discharges commonly diminish. This period is generally attended with some heat, thirst, headache, and fever; all which, however, may in general be prevented, or, at least, very much diminished, by putting the child early to the breast, emptying the bowels by an emollient injection, restricting the patient to a low diet, and keeping up an easy moisture on the skin, by means of tepid drinks, aided by the spiritus mindereri. These remedies altogether prevent, or generally

put an end to this complaint within twenty-four hours; but if the symptoms be preceded by an ague, and after that run high, in robust and full-habited women, it may likewise be necessary to lose a little blood. Rubbing the breast all over, except the nipple, with a little fresh lard, or butter from the churn, or simple cerate, softened with a little good oil, allows them to distend with more ease; it is likewise common with some nurses, to cover them with cabbage leaves, wilted with warm vinegar, by which they are sweated and relaxed: this is a useful practice; but when they can be procured, any other broad leaf, particularly those of the button-wood or burdock, or beet, are to be preferred, as they are not so apt to become offensive.

278. When a lump appears in the breast, it is common to have recourse to fomentations and poultices; but as these have a tendency to promote imposthumation, and as an imposthumated breast is always a painful, and sometimes a very severe disease, it is best, if possible, to disperse it. To this end, if the woman be strong, let her lose a little blood; let her be purged daily by (No. 8. e.) let her breast be frequently bathed with a mixture of one part vinegar and three parts water, applied milk-warm, and keep it covered with a linen cloth, constantly wet with (No. 10. d.) observe rather a low diet, and keep a little moisture on the skin, by (No. 12. a. or b.) By these means, in a few days, the tumour will probably disappear; or if the discussion should not be effected, the imposthumation will be less, which is gaining no inconsiderable advantage. When it is found that it will come forward, a milk and bread poultice may then be applied, and repeated two or three times in twenty-four hours, until the imposthumation shall burst, or at least,

until the skin shall become very thin ; when a small opening may be made in the most depending part. Should any hardness remain after the discharge of the matter, let the part be anointed two or three times a day with camphorated oil, and cover it with soft flannel ; if the hardness should not soon yield to this treatment, let a plaster of common diachylon, or a mercurial plaster be worn over it.

279. *Sore nipples* are a very painful, and sometimes a very obstinate disease ; the simple cerate, by supplying, in some measure, the place of the natural mucus, with which the nipple is defended, will mitigate the pain ; and using a ring of wax, just sufficient to let the nipple through, by defending it from the friction of the clothes, contributes to their healing. When they become ulcerated, washing, at first with a solution of lead, and after a few days, with spirits, with a solution of alum in brandy, of white vitriol, or of borax in water, and dressing with cerate, made by mixing finely powdered red precipitate with common cerate, are all recommended ; but simply keeping a linen cloth, constantly wet with rum, over the nipple, will frequently do more than either ; but then it must be kept constantly wet ; and as this is one of the easiest remedies, it should be first tried : the great variety of remedies recommended, proves the obstinacy of this complaint ; and I confess I have frequently failed to give much relief, until, by time, the nipple has become accustomed to the friction of the child's mouth ; and in a few instances, I have been compelled to advise weaning or procuring a nurse for the child.

280. *Puerperal or child-bed fever.* The puerperal fever begins with cold chills, succeeded by great heat, and accompanied by its characteristic symptom, a remarkable soreness of the belly, which in

no respect resembles after-pains, never remits as they do, and is always increased by pressure. The patient often complains of the slightest touch, and sometimes even of the weight of the bed-clothes. This soreness is generally confined, at first, to the parts over the womb, just below the navel; at other times, it extends more generally over the abdomen, and sometimes affects the bladder, so as to occasion a frequent and painful discharge of the urine; and the rectum, bringing on a frequent and painful urging to stool.

281. When the symptoms of inflammation, and the fever end soon in a copious perspiration, diminishing the heat, and lessening the pain; the disease is frequently carried off by this natural crisis, within one or two days; but when the attack is violent, when the cold chill is severe, and the succeeding heat very great, and especially, if that be imprudently increased by hot, spicy, and spiritous liquors, too frequently given to put an end to the chill; or by a load of bed-clothes and by hot drinks, continued after it has subsided; the soreness and pain increase, the belly swells, the secretion of the milk, and the natural discharges are checked or suppressed; and the patient dies of a sudden mortification, or the disease runs rapidly into a putrid state.

282. In this, the patient complains of a loathing and offensive taste, nausea and vomiting, the belly is uncommonly distended; a purging, and profuse clammy sweats come on; the discharges from the bowels and womb become highly offensive; the pulse, although at first strong and full, soon sinks; red and purple spots appear on the skin; the patient's strength fails, her countenance is expressive of great languor and extreme anxiety, and she commonly dies within a few days.

283. This combination, or rather this sudden

succession of putrid to inflammatory symptoms, is what constitutes the intricate nature and fatal tendency of this disease : and is that which has introduced much confusion and some contradiction into the writings of physicians, respecting it. In cold climates and seasons, in robust constitutions, in the country, and after severe or mismanaged labours, the inflammatory symptoms run high, and constitute the danger : these are to be cured only by the free use of the lancet. In feeble women, in some confined districts of large cities, in small, close apartments, and in the wards of an hospital ; the putrid symptoms are apt to succeed so rapidly, as to demand the attention of the physician very early ; and to render the evacuation of blood-letting a doubtful, if not a dangerous remedy.

284. And again, at particular seasons, and in confined districts, particularly in the atmosphere of a crowded hospital, this disease has appeared simply as a putrid and malignant fever, with no decided symptom of inflammation, or if any, so transient as to command no notice, and to require but little attention. And on some occasions, the air of a district, or the wards of a lying-in hospital, have become contaminated and pestilential, so that every child-bed woman, within the influence of that atmosphere, has been infected, and not one in ten or twenty has recovered.

285. This short history of puerperal fever will, I hope, enable us to lay down the most simple and efficacious mode of treatment ; and one, which any intelligent nurse may understand : so far, at least, as to prevent her committing some gross errors, which are too common, and which may render the best medical advice afterwards ineffectual. Whenever, therefore, a child-bed woman is attacked with chills, let it be remembered, that it may end in a very

severe disease; and that the woman's safety very much depends upon good management in the beginning.

286. This consists in putting an end to the chill as soon as possible, but in such a way as will not increase the fever which is to follow. Let some additional bed-clothes be put on the patient; let a bottle or bladder filled with warm water, or a hot brick, quenched with vinegar and wrapped in flannel, be put to her feet; and let her limbs be rubbed with warm flannel, which has the best effects in restoring an equable circulation of the blood: give her frequent draughts of warm catnep, balm, or weak sage tea; but avoid all kinds of cordials, spiced wines, gin, and other spiritous liquors, as you would the most fatal poison. As soon as the cold chill has ceased, and the patient grows warm, remove the warm applications, and lighten the bed-clothes; but do it gradually, for fear of bringing back the chill; with the same caution, draw open the bed-curtains, and admit fresh air into the room; give cool drinks, acidulated with lemon-juice, currant-juice, tamarinds, or a little good vinegar, sweetened with brown sugar or molasses. If the patient be very hot, take off more bed-clothes, admit more air, particularly in summer, and give the drinks actually cold. Continue this treatment until the heat of the body shall be reduced nearly to the natural standard; or until the patient break out into a free, easy perspiration, which generally takes place as soon as she is sufficiently cooled. Nothing so much interferes with natural perspiration, as a very hot skin; and hence, nothing is so dangerous as to attempt, in the beginning of fevers, to get the better of the chill by cordials and spiritous liquors; the heating effects of which remain after the chill has gone off; or of attempting to

force a sweat, after the chill has subsided, by a great load of bed-clothes, in a confined air, and heated room; and by hot drinks; by which the heat of the body is increased, and the intention of promoting a kindly perspiration most effectually counteracted. Any tendency likewise, which the succeeding fever may have to assume a putrid form, is by these means, greatly increased: all child-bed fevers have this tendency in a considerable degree, and when erroneously treated by a hot regimen, very soon become putrid. On the contrary, it generally happens, that as soon as the heat of the patient is reduced nearly to a natural standard, an easy relieving moisture breaks out, and that paroxysm of the fever, at least, is terminated: hence the salutary tendency of washing the body, in the hot stage of malignant fevers, with cold vinegar or cold water, with intention to shorten the hot fit, and bring on the sweating stage: a practice which, although inadmissible in the case of child-bed women, may serve to explain the reason of the cool treatment I have recommended. As soon as the hot stage goes off, and the skin becomes moist, the cold drinks must again be changed for such as are at least tepid or milk warm; and by taking frequently of such, and lying quiet under a moderate weight of bed-clothes, the perspiration is to be encouraged and kept up for several hours, until the fullness, quickness, and hardness of the pulse have subsided. But here again let it be remembered, that profuse sweating, long continued in a close confined air, greatly weakens the patient, postpones the complete crisis of the fever, and above all other things, increases its putrid tendency. All that is necessary and salutary is an easy moisture, which lessens the heat, and relieves the anxiety of the patient; this should be promoted and kept up,

under the use of cool, or at most, tepid drinks, light covering, and the air of the chamber kept so cool and refreshed, as to give no offence to a person entering it from the open air; until all anxiety and restlessness be removed, and the pulse have returned nearly to a natural standard. I have been thus particular in describing the conduct which the nurse is to observe in the treatment of child-bed women, or indeed of any other person, on the first attack of fever; because I fear it is not generally well understood, and because I am convinced, that if attentively pursued, it will, on many occasions, put an end to a serious disease in the first stage, and save the patient from a dangerous illness.

287. I have chosen, for the same reasons, not to interrupt it by directions for the medical treatment; which, however, is very important, and particularly so at the commencement of puerperal fever. If, therefore, the cold chill be succeeded by a high degree of fever; if the pulse be strong and full, and the patient robust; or if she have suffered any violence during labour; and particularly if she complain of much pain and soreness in the belly, she should be immediately, and in proportion to her strength, copiously bled; and if these symptoms are not mitigated, this evacuation should be repeated within twelve or twenty-four hours; the bowels should be emptied by mild purgatives, or rather by emollient elysters, frequently injected, not only as evacuants, but as a fomentation to the whole abdomen. The effect of tepid drinks, in promoting perspiration, is to be aided by the draughts, (No. 12. a. or c.) or the antimonial solution, (No. 12. d.) which, if it should excite so much sickness as to empty the stomach by gentle vomiting, it would be so much the better. A fomentation, by means of a flannel wrung out of warm water, with the addition of a quarter part

vinegar, should be applied over the whole abdomen, and a large blister upon that part which is particularly sore.

288. A putrid tendency is indicated by nausea, vomiting, and purging, with a belly much distended; putrid and offensive discharges both from the bowels and womb, and clammy unrelieving sweats; a pulse fallen in strength, but increased in quickness, and a countenance expressive of great languor and inexpressible distress.

289. The first approach of these symptoms should not only be carefully watched, but so far anticipated as to excite great caution in the use of the lancet, under circumstances favouring or increasing putrefaction; such as a hot season of the year, in a large city, and confined district; in a hospital or small confined room; and absolutely to forbid it on the approach of the second stage of the disease: cool air, light covering, cool acescent drinks, mild antimonials, or rather the draughts, (No. 12. a. or c.) given in the act of effervescence, are now to be persisted in; and in addition to those, almost daily vomits of ipecacuanha, in doses of five or six grains. By these remedies, the stomach and bowels are cleansed, and a gentle perspiration kept up, at the same time that the diarrhœa and other putrid symptoms are either prevented or checked. If necessary, the bowels must be kept open by small doses of rhubarb and vitriolated tartar, or rhubarb and calomel. When purging is profuse, it may be checked by the addition of five or six drops of laudanum to two grains of ipecacuanha, given every four or every six hour or by the clyster, (No. 6. a.) of twenty or thirty drops of laudanum, and repeated twice or three times in twenty-four hours; but it is not safe, absolutely to suppress the diarrhœa, which always gives some relief. All drinks are to be cool

and acidulated, and the nausea may be checked by the draughts (No. 12. c.) given during the effervescence; fresh air is to be admitted into the chamber, and the most perfect cleanliness observed, by frequent change of linen, and carrying out every offensive or excrementitious matter as soon as possible. When the putrid symptoms resist these remedies, wine, columbo root, and the Peruvian bark, must be substituted in their stead; but from the inflammatory symptoms with which puerperal fever generally commences, it does not bear those remedies early; and the cool regimen, acescent drinks, and neutral draughts, vomits, and mild evacuations by the bowels, are generally sufficient without them. For a more particular description of the symptoms and treatment of this disease, than is consistent with my design, I must refer my reader to the admirable writings of Mr. White of Manchester, and of Dr. Denman.

290. *Swelled leg.* Child-bed women are liable to a very peculiar disease, of which a swelling of the lower extremities, preceded and accompanied by great pain, and an inability to move, are the most conspicuous symptoms. It seems no way connected with any preceding complaint, or peculiarity of constitution; nor to depend on the kind of labour which precedes it, or on the treatment before or after child-birth. It occurs at any period from the first or second day, to two or three weeks after delivery; it is preceded by general uneasiness, lowness of spirits, slight pains about the womb, and a lochial discharge, peculiarly offensive; but these symptoms seldom command much attention, until the patient is seized with pain on the inside of the limb, commonly about the calf of the leg, which soon extends from the heel to the groin, along the course of the absorbent lymphatics; the limb soon

after begins to swell; the soreness extends all over it, so that it cannot bear the slightest touch, and every attempt to move, gives exquisite pain; the skin becomes glossy and pale; the countenance is expressive of great anguish and dejection; the pulse is quick; the heat of the skin increased; the tongue white, and the urine turbid and muddy.

291. These symptoms strongly mark the absorption of some morbid and poisonous matter, which, although irritating and inflaming to the obstructed vessels, is depressive of the powers of life, and weakening to the constitution in general.

292. Hence all free and copious evacuations, by bleeding or purging, have been found not only useless, but prejudicial in this complaint; and gently aperient and sudorific medicines, with a diet rendered cordial by the moderate use of wine from the beginning, most useful. The limb may be embrocated with camphorated oil, with or without the addition of opium, and slightly covered with soft flannel. The severity of the pain may be allayed, and necessary rest procured, by sudorific anodynes. Under this treatment alone, properly persisted in, the patient generally recovers; for although very tedious and distressing, this complaint has seldom proved fatal, and there is great reason to believe, that the very few cases in which it has, have been aggravated by mismanagement. My friend, Dr. David Hosack, of New-York, informs me, that he has found squills and calomel (No. 13. a.) peculiarly beneficial in this disease. I have had no experience in the use of this remedy; but, independent of the reliance I have in his assurance, I think it promises so well, both as an alterative and diuretic, that I am much inclined to recommend it.

Mania.

293. *Mania* is a disease to which pregnant, and particularly child-bed women, seem to be peculiarly disposed; and this predisposition very probably originates in that very irritable state, which the whole habit assumes in consequence of pregnancy and labour. It is often seen to come on from very slight, or rather from no evident cause, during those states; in women who are at all other times free from any disposition of that nature, and generally subsides again in a few weeks after delivery, without any efforts made to remove it; it sometimes returns, after successive labours, in the same woman. It has been supposed connected with the secretion of the milk, and several cases which have fallen under my observation, have so far confirmed this opinion, as to have been attended with a sudden and total suppression of the secretion of that fluid; but that may as probably have been the effect, as the cause of the mania, which, in most cases, interferes with all the natural secretions. We are perfectly ignorant of the cause of mania; our practice, therefore, is purely palliative and empirical, and we often see the disease subside, after having, in vain, exhausted all known remedies.

294. These considerations should make us cautious in the use of very active remedies, such as copious bleeding, powerful purges, blisters, absolute restraint, and harsh treatment, which have unquestionably been too incautiously and indiscriminately applied in common cases of mania; but in women weakened by the complaints of pregnancy and child-bed, they must be peculiarly improper; and can only tend to fix and render that disease permanent, which would probably subside in a little time, under

a more gentle and soothing, but at the same time a firm and steady treatment.

295. All the restraint, therefore, that such unhappy women should be subjected to, should be such as is necessary to prevent their doing mischief to themselves or others; and under such, their harmless wishes will be gratified with advantage; unnecessary contradiction can only serve to bring on a furious fit, the very violence of which must exhaust and weaken, and consequently increase that irritability, on which we have great reason to believe, the complaint in a great measure depends.

296. In the first stage of the mania, of pregnant or puerperal women, some degree of fever is not uncommon; at this period, therefore, some mild evacuations, such as gentle purging, clysters, and the sudorific draughts, are very proper; an occasional emetic has been found peculiarly useful, and on some few occasions of extraordinary vigour, small bleedings, particularly by cupping about the temples or neck, have proved successful. The patient should be kept perfectly quiet; the room as much darkened as she will permit, unless in cases of great melancholy and dejection; as few objects as possible should be offered to her attention; and every circumstance that can alarm, irritate, or depress her spirits, most carefully avoided. Opium, in large doses, has been recommended; but the weakness and increased irritability which succeed its use, seem to forbid large doses, particularly during the existence of fever; but small doses, united to sudorifics, may then be found to calm irritation, as well as to excite perspiration. Camphor has likewise been recommended, and by some, in very large doses: but we know too little of the operation of large doses of camphor, to recommend them: in small quantities, combined with asafœtida and am-

moniac, it may be tried with some probability of advantage. Blisters have been generally found prejudicial, but have been supposed useful when applied to the head, and repeated, so as to bring on a purulent discharge; which end is better procured by caustic; by which a more permanent discharge is obtained, and repeated irritation avoided. After the first stage, a brisk vomit has appeared more evidently useful than any other very active remedy, and now and then has been immediately succeeded by a perfect cure. When, in this way, it has failed, a repetition of vomiting, to a moderate degree, has been found very beneficial. This remedy, therefore, should not be neglected: it tends to rouse all the healthy actions of the organs, and in a peculiar manner to improve the appetite and digestion; on some occasions, it requires a large quantity of tartar emetic, given in divided doses, before it will operate. The state of the bowels must be constantly attended to, and regulated by clysters or mild cathartics.

297. The diet should be neither abstemious nor stimulating, but consist chiefly of vegetables, milk, eggs, and light meats, with such a use of wine as, under all circumstances of health and strength, would be considered at least moderate. Country air and moderate exercise will be found, in due time, very conducive to recovery; both from the general salubrity of the country, as well as the greater proportion of liberty and amusement, consistent with quiet and retirement, in which the patient may be there indulged. It is absolutely necessary to command and controul maniacal patients, and this is one reason for separating them from their friends, and very near connexions, whom they are less inclined to obey than strangers; and against whom they are apt to entertain violent antipathies and resentment.

Child.

298. As soon as the child is separated from the mother, let it be carefully covered from the cold, by wrapping it in warm, soft flannel, leaving such an opening only, as is sufficient to admit the air necessary for its breathing; place it in an easy posture, and a warm situation, where it may lie until the mother shall be safely put to bed. In washing the child, make use of soft warm water only, or milk and water, and be not over anxious to rub the skin perfectly clean; by which it is often fretted and inflamed, which is more frequently the cause of that galling, in the creases of the skin, to which new-born infants are liable, than any small portion of the natural mucus which may be left adhering to it; let it be dried perfectly with soft old linen, and as soon as can be done with proper care, let it be defended from the access of cold air by soft, warm, and loose clothing. Begin with the head, which may be washed and warmly covered before the body is exposed. As soon as the body and limbs are washed, examine the navel-string, to see if it be properly secured; then wrapping it in a piece of old linen, double it up against the child's belly, in such manner, as will not put the attachment at the navel on the stretch, and secure it by a bandage pinned round the child's body, but by no means tight. In doing this, ever remember that nothing is more tender and delicate than a new-born infant, nor any thing more sudden than the great changes to which it is exposed: from a kind of vegetable life, it now breathes and cries; from being at absolute rest, it is handled and turned in various postures; and from being totally immersed in warm water, it is exposed to the access and irritation of the cold air. If, therefore, we were to make use of no more caution

than we should think necessary for an adult, under similar circumstances, we ought to take care to handle it with great gentleness, to lay it in an easy posture, and carefully to defend it from the cold.

299. Hitherto the child has been supported by absorption, more like a plant than an animal; as yet it has taken nothing into the stomach; we ought, therefore, to be very careful what we introduce. Nature has provided the milk of the mother as its most proper nourishment, and there cannot be a doubt, but that the more it depends on that only, during the early months, the better. Let it, therefore, be put to the breast as soon as the mother has recovered a little from her fatigue, and in the interim, give it nothing; the mother's breasts being flaccid, with no appearance of milk, is no argument against this salutary practice: the suction of the child will bring a flow of milk into them, sooner and more safely than it will come without it; and the very first flow of milk is peculiarly fitted for the infant, as, from its purgative quality, it tends to carry off the black excrementitious matter, which has been collecting in the child's bowels during the whole period of pregnancy. If, therefore, the child should not, by this means, obtain a free and plentiful evacuation from its bowels within twenty-four hours, it will be necessary to promote stools by a tea-spoonful of castor-oil; or if that is not to be had, a little molasses and water, or a simple injection.

300. After difficult labours, when the head of the child has been long locked between the bones of the pelvis, it will frequently be moulded into a conical shape, with the bones in some measure overlapping each other. In these cases, none, or at least very slight attempts are to be made to replace them; but they should chiefly be left to nature, which, in a few days, will restore it to its natural form; when.

the scalp is much bruised and swollen, a cloth wet with vinegar or spirits, should be laid over it. In breech presentations, the private parts of the child are apt to suffer, and sometimes appear much swollen and perfectly black; but little is likewise to be apprehended from this injury, which is soon relieved by fomentations, with the addition of vinegar and spirits, or cloths wet with camphorated spirits or vinegar.

301. Children are frequently born apparently dead, whose lives, by a little care may be restored. In such cases, carefully avoid all rude handling, or sudden motion; let the infant be laid in an easy posture, with its mouth exposed to the air, and its head so supported, as neither to be bent back nor forward; if a feeble child, and pale, leave it attached to the placenta as long as there is any pulsation in the navel-string; but if the child appear to have been healthy and strong, and the face purple and livid, cut the cord, and let it bleed one or two table-spoonsful before tying; be careful, however, to keep the end between the thumb and finger, so as to command the flow of blood, and take care to tie it securely. After it has been separated from the mother, let it be laid, with the same care and attention, on the lap of an assistant, near the fire, and wrapped in warm flannel; let its bowels, breast, and limbs, be continually but gently rubbed with flannel wet with warm spirits; brush the soles, palms, and back, briskly with a soft brush; with a finger clear the child's mouth and throat of any mucus that may clog them; apply an onion or hartshorne to the skin and nose, and by means of the finger, rub a little of either on the inside of the mouth; now and then close the nostrils, and blow forcibly into the mouth; then removing your own mouth, press the chest gently down, so as to force

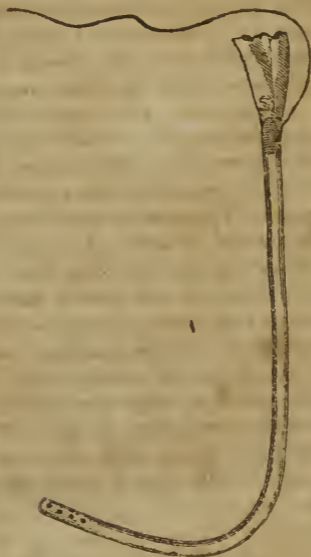
out the air, and in this way imitate breathing; administer a warm, stimulating clyster, immerse the child in a bath, made stimulating by the addition of a little spirits, and so warm as to be rather hot to a tender hand, and continue gentle frictions while in the bath; persevere in these endeavours for at least one or two hours; even after a longer time, many happy instances have occurred of success. A faint sighing, or a feeble pulsation of the heart, are the first signs of returning life, which are to be encouraged by gentle perseverance, but carefully avoid all sudden and rude motion, by which it may be extinguished as easily as a candle just beginning to flame.

302. In common cases of suspended animation, there can be no doubt, but that the best means of stimulating the heart is, to oxygenate the blood, by throwing fresh air into the lungs: and the best means of doing this, is to make use of a bent silver tube, one end of which being introduced into the wind-pipe, the other is fixed to the nose of a common bellows, by means of a piece of leather, first attached to the tube, and then tied to the bellows by a piece of pack thread wound round it, as recommended by Doctor John Augustine Smith, professor of anatomy and surgery in the college of physicians and surgeons of New-York. But it should be remembered, that the insensibility of new-born infants is seldom a case simply of suspended animation, but commonly arises from the compression which the brain suffers whilst passing through the pelvis. Leaving the child therefore attached to the mother, by which the oxygenation of the blood is preserved, whilst some gentle means of nursing the nervous energy are put in practice, should always be first tried in feeble infants; and in such as are strong, with swoln and livid faces, cutting

the navel string, and drawing off some blood, as directed above, should not be omitted. In far the greater number of cases, these gentle means, aided as above directed, will succeed; but as they will also sometimes fail, every practitioner of midwifery should be provided with the most convenient apparatus for oxygenating the blood, by throwing fresh air into the lungs. I have therefore given a plate* of the tube, recommended by Doctor Smith, and of the proper size and curvature which he has ascertained by actual experiments, and with which he has been so obliging as to furnish the engraver. The manner of using this instrument is sufficiently obvious to any person properly qualified to practice midwifery: but I confess I should not choose to put it into the hands of the generality of female practitioners, or any other person not sufficiently acquainted with the anatomy of the parts, to render its application safe and effectual; or not apprised of the great tenderness and delicacy with which a new-born infant should be handled.

* See page 236.

PLATE XX.

*Blue Child.*

303. Some children, soon after birth, are observed to change colour; the face, neck, and extremities become livid, the lips and nails perfectly blue, the pulse irregular, and the extremities cold; at the same time the lungs are not fully expanded, the child breathes with difficulty, and in an interrupted manner, and, in some instances, the respiration is, for a short time, totally suspended. Whilst this is the case, the discolouration increases, and the pulse frequently stops; in a few moments res-

piration is renewed, the colour changes to a more lively tint, the pulse beats with more freedom and regularity, and the natural heat returns. These symptoms subside and return at irregular periods, and are frequently brought on by motion; and even when the child lies perfectly quiet, are apt to continue and increase until they put an end to the child's life, generally within a few days; yet some instances have occurred, in which they have come on later, and a few in which they have continued for several years. The causes have been traced by dissection, in several instances, to a continuance of that state of circulation, by which the fœtus exists in the womb; in which the blood, passing by the ductus arteriosus and foramen ovale, the lungs are not expanded, and the oxygenation of the fœtal blood is derived from the mother. If, therefore, after birth, the same circumstances continue, or if, from mal-conformation, the blood find any other passage from the right to the left ventricle of the heart, only a part of the blood can pass through the lungs, and consequently, the whole mass will receive but a partial oxygenation.

Thus it is attempted to account for the symptoms, and generally fatal termination of this complaint; yet it must be confessed, that such symptoms may arise from other and less incurable sources; and lesser degrees of the complaint, even upon this supposition, may yield to time and good management: the fœtal passages may gradually close up, and the blood, after some time, may assume a course more natural to a breathing animal; proper remedies, therefore, to remove all lesser sources of interrupted respiration, as well as to palliate the symptoms of this complaint, should never be omitted. In all such cases, therefore, empty the child's bowels by a clyster of warm catnep tea, with the

addition of a small tea-spoonful of common salt; let it be immersed in a warm bath, made stimulant by the addition of one sixth part brandy or spirits; while in the bath, be careful to keep it in an easy posture, and gently rub its limbs with a soft hand; at the same time, feed it moderately with some cordial nourishment, such as wine whey, which is peculiarly proper when, as commonly happens, the subject is a delicate and feeble infant. These remedies must be persisted in, until the symptoms remit, and repeated as often as they recur. Two very happy instances of their success, with a minute description of the disease as it occurred in those, are related by Dr. David Hosack, in the first volume of the *Medical Repository*, page 507.

304. New-born children are particularly subject to three diseases: a red eruption, called the red gum, a jaundice, and aphthæ or the sprue; against these, early purging is the best preventive, as well as the best cure; molasses and castor-oil answer well at first, but after some time, these complaints are generally combined with griping; for the relief of which, magnesia or prepared chalk, with a little rhubarb and aniseed-water, are better adapted; when a diarrhœa accompanies these complaints, the rhubarb and magnesia should be omitted, and the chalk, combined with gum arabic, (No. 15. a. e.) substituted in their place; and when the pain and griping are severe, laudanum may be added. Be careful, however, never to give laudanum to new-born infants but in this way, combined with so much water, as to divide the dose very minutely. I once knew a child of several weeks old, killed by ten drops of laudanum, and another brought into great danger by less than two drops. In aphthæ, *the sprue*, it is too common a practice to rub the crust

from the child's tongue; this not only puts the infant to pain, but the crust is sure to return in a greater degree: a small quantity of molasses, frequently put into the child's mouth, or a little finely powdered borax, mixed with sugar, are the best topical applications.

305. *Convulsions* are a very terrible and alarming complaint in new-born infants; they commonly arise from the state of the stomach and bowels: and emptying these by castor-oil clysters, and a mild emetic, (No. 11. a.) together with bathing the child up to the chin, every time they come on, in warm water, with the addition of a little spirits, are the principal remedies. After having done this, recourse may be had to the moderate use of opium, in the manner above directed; and a very small blister may be applied between the shoulders, which should be removed after one or two hours, and the part covered with a piece of linen, spread with fresh mutton or veal suet, or a little simple cerate. Blisters, left long applied to young infants, are very apt to ulcerate and become not only exquisitely painful, but truly dangerous; for which reason it is always best, in the first place, to try the effect of some other stimulating application, such as the juice of an onion, or a piece of flannel, moistened with the common volatile liniment applied to the spine.

CONCLUSION.

Convinced that a general knowledge of the nature of pregnancy and labour, and of the symptoms and complaints which attend them, will frequently prevent much unnecessary alarm; will, on many occasions, point out safe and easy remedies, and on

all, enable women to act with self-possession, steadiness, and composure, the author has attempted to explain them in easy and intelligible language. His principal objects have been, to check the too frequent interposition of art, and to restore nature to her just authority; to accomplish which, he believes it necessary, not only to improve the knowledge and correct the errors of midwives, but likewise to remove many prejudices and groundless apprehensions from the minds of their patients. He has, therefore, endeavoured to divest his subject of all mystery, with a view to adapt his work to the comprehension of women in general, as well as to professional characters; not, however, without some apprehension, that so long a catalogue of ills, to which woman is exposed, may, in some weak minds, excite more fears, than the knowledge of their remedies may give confidence. Let them not, however, be discouraged: few women suffer materially from them; and the probability that any one individual shall escape all that are serious, is greatly in her favour. Provident nature is wonderfully kind to pregnant women; and when she is properly consulted, attended to, and obeyed from the beginning; not weakened by excess of any kind; nor thwarted and put out of her course by preposterous mismanagement in her progress, will, nine hundred and ninety-nine times out of a thousand, carry her votary safely through all the wonderful changes of this eventful period.

APPENDIX.



IN this Appendix are given, not only all the remedies referred to in the foregoing Essay, but receipts for their preparation, their proper doses, and directions for their general use. Some few, likewise, are added with a view to render it more complete, as a domestic pharmacopœia, for the use of families at a distance from medical advice; or on slight occasions, when it may not be necessary to call in a physician. A variety are given under each particular head, that in the country, when one is not to be had, its place may readily be supplied by another; and they are generally arranged in the order of their activity, that they may more easily be adapted to particular cases.

The doses here prescribed, are all intended for adults. Whenever it is desired to adapt them to young persons or children, the following proportions may be taken: for a youth of fifteen years, three-fourths; for a child of ten years, one half; and for one of five, one quarter of the dose directed: varying the dose a little as the patient's years vary, or as the constitution is more or less robust or weakly. More precision than this is unnecessary, as (except in the instance of laudanum, respecting which, the directions are very particular,) no remedy here mentioned, is of so active or dangerous a nature, as to render a slight variation of much con-

sequence ; and a very little experience will enable any intelligent person to adapt them to particular subjects, with as much accuracy as can be required.

No. 1. *Sudorific drinks.*

Warm water, balm, catnep, or weak sage tea. Of these, warm water, although the least pleasant, is the most efficacious ; it excites some nausea, and thereby, powerfully promotes perspiration. They may be all rendered more agreeable, and quench thirst more effectually, by the addition of any of the following acids, with a little sugar : *lemon-juice, currant-juice, tamarinds, cream of tartar, or good vinegar*, in such quantities as shall be most agreeable to the patient.

No. 2. *Mucilaginous drinks.*

a. *Flax-seed tea, marsh-mallow tea*, or one made of *quince seeds*.

b. *Barley water*, is made by boiling two table-spoonsful of pearl barley, (first washed in cold water,) in three pints of water, until one third is wasted ; a handful of stoned raisins or of sliced figs, may be added towards the end of the boiling.

c. *Solution of gum-arabic*, is made by boiling one ounce of picked gum-arabic in little more than a quart of water, until it be dissolved. All these are useful to sheathe and defend very sensible parts from the irritation of acrid humours, as is the case in a tickling cough and common lax ; or bloody-flux, heat of urine, &c. in all which, the natural mucus of the parts is defective.

No. 3. *Astringent drinks.*

a. *Infusion of roses.* Upon a large handful of dried red rose-leaves, pour a pint of boiling water; let them infuse half an hour.

b. *Infusion of oak bark.* Upon a handful of white-oak bark, shred fine, pour a quart of boiling water; let it stand one hour, then boil a few minutes.

c. *Infusion of galls.* Upon a quarter of an ounce of galls, bruised, pour a quart of boiling water; let them infuse one hour, then boil for a few minutes. A small quantity of cinnamon adds greatly to the flavour of b. or c. and acidulating any of them with the acid of vitriol, (No. 16. f.) renders it more efficacious; they should be taken cold, to the quantity of half a gill, or a wine-glassful, every hour or two.

CLYSTERS.

No. 4. *Simple and Emollient.*

a. Warm water.

b. Milk and water in equal parts.

c. Flax-seed tea.

d. Mallow tea.

e. Infusion of quince seeds.

f. Barley water.

g. Solution of gum arabic.

h. Very thin starch, made by boiling fine wheat flour with water.

From half a pint to a pint, to be administered a little more than milk-warm. They are useful and efficacious where mere relaxing and emollient effects are required; the addition of the mucilaginous substances will occasion them to be longer retained

than simple water would be; and are particularly proper, when any irritation, or remarkable tenderness of the intestine exists: with the same intention, a table-spoonful of good sweet-oil, fresh hog's lard, or fresh butter from the churn may be added; but unless perfectly fresh, should be omitted, as the least rancidity will irritate and injure.

No. 5. *Purgative and Stimulating Clysters.*

Any of the above, No. 4, with the addition of

a. Two table-spoonful of molasses or of brown sugar.

b. Two or three tea-spoonful of common salt.

c. Half a table-spoonful of common soap.

d. Where clysters are required to be simply stimulating, increase the quantity of common salt by one or two tea-spoonful.

e. And towards the end of fevers, when an antiseptic is desired, the clyster may consist of a strong infusion of chamomile flowers, with one or two table-spoonful of vinegar, or a solution of common yeast.

No. 6. *Anodyne Clysters.*

a. A gill or common tea-cupful of new milk, or of any of the mucilaginous substances mentioned, (No. 4.) with the addition of laudanum, in such quantity as directed. In general a patient will bear three times the quantity of laudanum, administered in this way, that would be a proper dose when taken into the stomach; so that, if to procure rest, twenty-five drops would be given in a draught, seventy-five may be administered in a clyster, and the sickness and other ill consequences, which some persons

complain of after laudanum taken into the stomach, seldom follow, (not, at least, in the same degree,) when it is administered by clyster.

No. 7. *Nourishing Clysters.*

a. From half a pint to a pint of good strong soup, made of fresh meat, without salt, pepper, or any vegetable.

b. The same quantity of new milk, with or without two or three tea-spoonsful of brandy.

Should these be too soon discharged, laudanum may be added, in quantity from twenty to forty drops, but no more than shall be found necessary.

No. 8. *Mild Laxatives.*

a. *Magnesia.* One or two large tea-spoonsful.

b. *Magnesia and cream of tartar*, ground to an impalpable powder in equal parts; one or two tea-spoonsful of the mixture at a dose.

c. *Magnesia.* One tea-spoonful, with three or four grains of rhubarb in fine powder.

Magnesia is always proper when the patient complains of a sour stomach; the cream of tartar adds to its purgative effects where that is not the case; the addition of rhubarb is useful in weak stomachs and bowels; calcined or Glass's magnesia, is less apt to distend the stomach with air, but is too expensive for ordinary use. New milk, except when cream of tartar is added, is the best vehicle.

d. *Cream of tartar.* One ounce in very fine powder, in a pint of common water, or of barley water, (No. 2. b.) sweetened with molasses or brown sugar, and taken in the quantity of a small tea-cupful, twice

or three times a day, is a very agreeable and certain laxative; the vessel must be shook whenever it is taken.

e. *Cream of tartar and flowers of brimstone*, in equal quantities; a tea-spoonful of the mixture, two or three times a day, in molasses. This is supposed to be possessed of peculiarly good qualities in cases of piles and eruptions.

f. *Castor-oil*. One large table-spoonful to a dose; a very small quantity of spirits in the bowl of the spoon, occasions this viscid oil to be taken and retained with more ease. No medicine is more effectual in finding its way through the bowels, and, therefore, it should precede all others in cases of obstinate costiveness; but in such cases, should be accompanied or followed by more active purgatives.

g. *Glauber's salts*. One ounce dissolved in a quart of water, of which, a tea-cupful, taken once, twice, or three times a day, sits well on the stomach, and will be found, in most cases, a useful, cooling, and convenient laxative.

h. *Lenitive electuary*. Take lenitive electuary of the shops, or molasses, or the syrup of any preserved fruit, two ounces; of the flowers of brimstone and cream of tartar, each half an ounce; of salt-petre one quarter of an ounce; let the salts be finely powdered, and mix the whole well together. This makes an agreeable laxative, supposed to be possessed of peculiar advantages in cases of piles: a large tea-spoonful may be taken two or three times a day, according to its effects.

i. *Rhubarb and ipecacuanha*. In the quantity of four grains of rhubarb to two of ipecacuanha, is a most useful medicine in all cases of disordered bowels, attended with griping and fever; less doses, of one half or one quarter of this quantity, will be found a very effectual remedy in the common lax to which

children and infants are liable in hot weather; the dose may be repeated every eight or twelve hours, or given only going to bed, according to the urgency of the symptoms.

No. 9. *Active Purges.*

a. *Glauber's salts*, in doses of one ounce, one ounce and a quarter, or one ounce and a half, dissolved in a pint of water. This is a most safe and active purge, particularly in the beginning of fevers; it is offensive to the palate, and for that reason, some persons wish to dissolve it in less water, and to take the whole at one dose; but in this way it is more apt to offend the stomach, and be rejected.

b. *Rhubarb and vitriolated tartar*, in equal quantities, ground very well together; fifteen grains, taken going to rest, and repeated in the morning, will be found an efficacious remedy, whenever it is required to cleanse the stomach and bowels of bilious and other offensive matter; as is the case in common intermittent and remitting fevers; the recurrence of which, a prudent use of this remedy will very frequently prevent; it is very easily made into pills with a little molasses, in which form it keeps perfectly well, and is always ready.

c. *Rhubarb and calomel*. About thirty grains of rhubarb and six or eight of calomel. This is an active purge, very proper to destroy and evacuate worms, and is frequently given with good effect in the beginning of dysenteries. When a certain but moderate effect is required, give one quarter part of the above dose every six or eight hours; it should always be taken mixed in molasses or syrup, on account of the weight of the calomel, which, in a thinner vehicle, would be lost:

d. *Jalap*. This active purgative should always be ground very fine, with one half or an equal quantity of some hard neutral salt, (vitriolated tartar or cream of tartar) and one quarter part or one third as much ginger or cloves; prepared in this way, it acts in a less quantity, and gripes much less than when given alone. Thirty, forty, or fifty grains of this mixture is an active purge, particularly useful in carrying off cold, watery humours; thin gruel or weak broth, should be drunk freely during the operation of a purge, except in the last case, when it is best to drink but little.

No. 10. *Aloetics*.

a. *Anderson's Pills*. All aloetic medicines are found to irritate the lower intestines, and consequently, the womb in a particular manner; and for that reason, they are generally forbid during pregnancy, and in cases of piles; but many persons, from the small dose in which these pills operate, and the convenience of keeping them, are habituated to their use, and in such cases, they may be continued even during pregnancy, but they should never be chosen at that period.

b. *Tincture of myrrh and aloes*, called elixir proprietatis. Infuse of bruised myrrh two ounces in a quart of good brandy or spirits of the highest proof, for three or four days, keeping it in the sun or near a fire, and shaking it frequently; then add, of socotorine aloes, three ounces; after it has stood three or four days longer, still occasionally shaking the vessel, pour off the clear liquor; add half a pint more spirits to the residuum, and after standing three or four days longer, decant and mix them together: it is absolutely necessary the brandy and

spirits should be of the highest proof. This is a convenient, safe, and agreeable domestic medicine; useful in all cases in which aloes are directed, and particularly so for children with weak stomachs and bowels, and distended bellies; who, from that cause, are subject to indigestion and worms. From a very small to a very large tea-spoonful, according to their ages, is a proper dose for children from one to eight years old; a grown person may take two large tea-spoonful; it should be mixed first with brown sugar, and then diluted with a table-spoonful or two of hot water, or common, or what is better, tansy tea, and taken fasting. This dose, in the cases above mentioned, should be repeated for three or four mornings, and then omitted for some time; when desired to act immediately as a purgative, it may be repeated in three or four hours, until it produces a proper effect.

c. *Aloetic pills.* Take socotorine aloes a quarter of an ounce, of gum guaiacum thirty grains, tartar emetic twelve grains; let the tartar emetic be first ground with the gum guaiacum; then add the aloes in small quantities, until they are intimately mixed, with as much syrup as is necessary; form the whole into fifty pills; one, two, or three, to be taken at bed-time, as a substitute for Anderson's pills.

No. 11. *Emetics.*

a. *Ipecacuanha.* This, when good, is sufficiently active in most cases, and certainly the safest emetic we are possessed of; from twenty to thirty grains is a full dose; from three to ten, taken at the distance of ten or fifteen minutes, for two or three doses, is a safer mode in cases of pregnancy, and proves

equally efficacious. When it is wished that it may operate on the bowels, or particularly in cases of dysentery, small and repeated doses are most certain; in this way, too, it powerfully promotes perspiration, which renders it very useful in the beginning of all fevers.

b. *Tartar emetic.* Six grains, dissolved in ten or twelve table-spoonsful of hot water; of which, two may be taken at first, and one repeated every ten minutes, until it operates sufficiently. In this way, tartar emetic is most safely given in all cases in which it is proper, as in the beginning of intermitting and bilious fevers, but should never be given to pregnant women.

c. *Dreacaumna fifteen grains, tartar emetic from one to three grains.* This is a very effectual emetic, whenever a sudden operation is required. Warm water, or chamomile tea should be drunk during the operation of an emetic; but the stomach is not to be overloaded with them: half a pint, or at most a pint, is sufficient, at one time, on the stomach.

No. 12. *Sudorifics.*

a. *Mindererus's spirits.* Take a quarter of an ounce of volatile alkali, (salt of hartshorn) pour on it good vinegar, by small quantities at a time, until it shall be neutralised, (that is, as long as it shall continue to effervesce or rise in foam, and until neither the sourness of the vinegar, nor the ley-like taste of the salt prevails.) This is a very useful medicine in all fevers; a table-spoonful may be given every hour, in any warm drink, until the patient shall break out in a free perspiration, and then be continued every three hours.

b. *Sudorific anodyne.* To a large table-spoonful

of the above, (a.) add twenty-five or thirty drops of laudanum. This is one of the best forms in which laudanum can be given, whenever it shall be proper in fevers.

c. *Effervescing draught.* Take fifteen grains of pearl-ash, salt of wormwood, or salt of bartshorn, dissolved in a table-spoonful of water, in one cup; in another, two large tea-spoonful of lime-juice or lemon-juice, or one table-spoonful of very good vinegar, with one or two table-spoonful of water, sweetened; pour one to the other, and let the patient drink them immediately, while they effervesce. When made with fresh lime or lemon juice, this is an elegant, pleasant, and useful medicine in all fevers, and peculiarly effectual in removing nausea and vomiting; it may be repeated every two or three hours.

d. *Tartar emetic.* Dissolve two grains of tartar emetic in eight table-spoonful of hot water; give one table-spoonful every two or three hours.

e. *Ipecacuanha*, in doses of one or two grains, of the powder, every two or three hours; given in molasses or syrup.

f. *Salt-petre*, in doses of ten, fifteen, or twenty grains, mixed with a little hard sugar or syrup, or molasses, every two or three hours.

These three (d. e. f.) by the nausea they excite, powerfully lessen the force of the circulation, and promote perspiration. They are particularly proper in the beginning of fevers, attended with symptoms of inflammation; and are likewise used in the active stage of hæmorrhages, attended with a strong pulse and increased heat; but are improper towards the end, when the patient has been much weakened by the previous disease.

No. 13. *Diuretics and Alteratives.*

a. Take dried squills, in fine powder, twenty grains, prepared calomel, thirty grains, mucilage of gum-arabic, or thick starch, as much as is sufficient to make into twenty pills; two of which are to be taken going to rest. These pills powerfully promote urine, and are very efficacious in carrying off cold, phlegmatic humours, in all dropsical swellings.

b. Pound a handful of the kernels of pumpkin seeds or melon seeds, or blanched sweet almonds, with a small quantity of hard white sugar, to a smooth paste; then add a quart of boiling water, and a quarter of an ounce of salt petre, or half an ounce of sweet spirits of nitre, and rub them well together. This is a pleasant and mild diuretic, particularly useful where the discharge of urine is attended with heat and pain; a tea-cupful may be taken every two or three hours.

c. *Calomel*, in doses of one or two grains, given every night or every other night, drinking with it the following diet drink, (d.) 'These together, make a powerful alterative for blotches on the skin, foul eruptions, and all other cases, in which the object is to remove obstructions, and sweeten the humours. An occasional warm bath greatly promotes their good effects, whilst at the same time it contributes to prevent the mercury attacking the mouth, and bringing on salivation, which, during the use of calomel, must be carefully watched and guarded against; by avoiding cold, and suspending the medicine, from time to time, for a few days.

d. *Alterative diet drink.* Boil one ounce of the borings of *lignumvitæ*, and two ounces of split sarsaparilla, in three pints of water, until it comes to a quart; then strain it through linen; to be drunk in

one or two days, by divided doses. The sarsaparilla, which is the least efficacious, is by far the most expensive article in this diet drink ; it may, therefore, be omitted, adding in its place half an ounce more of *lignum vitæ*, or two ounces of parsley roots. In either case, a small handful of stoned raisins, or two or three sliced figs, or half an ounce of liquorice root, will render it more agreeable.

No. 14. *Anodynes and Antispasmodics.*

a. *Laudanum.* This medicine should be purchased from a good apothecary, who makes it according to the established receipts. To a grown person, unaccustomed to laudanum, twenty-five or thirty drops is a common, forty or fifty drops is a full dose, in cases of great pain ; but this must be increased to a larger dose for such persons as are accustomed to its use ; or in cases of severe and obstinate pain ; or, which is a safer mode, give at first a common dose, and repeat ten or fifteen drops every twenty or thirty minutes, until the pain shall subside.

b. N. B. In giving laudanum to infants, (which should be avoided as much as possible) always drop eight or ten drops of laudanum into a tea-cup, then add as many tea-spoonsful of water. Of this, give the child, if under two months old, half a tea-spoonful ; if above three months, one tea-spoonful ; and although that dose should not relieve, do not repeat it in less time than half an hour : indeed, to all young children, laudanum should be given only in this way, increasing the dose one drop for every year.

c. *Sweet spirit of vitriol, or sweet spirit of nitre.* These lessen heat, slake thirst, and calm uneasy feelings ; and are, therefore, very proper in feverish complaints, during pregnancy, and on other occasions ; one small tea-spoonful in a cup of cold water,

is a common dose, and may be repeated every four, six, or eight hours.

d. *Gum pills.* Take asafœtida three parts, gum ammoniac two parts, camphor one part; beat them very well together, and with as much syrup as is necessary make into pills of the size of a common pea; from three to five may be taken at a dose, and repeated as often as shall be found necessary; not, however, exceeding three or four doses in a day. This is a powerful antispasmodic, and very useful in all nervous and hysterical complaints. When it is wished to render the mass purgative, add as much socotorine aloes as of camphor.

No. 15. *Absorbents, and Correctors of Acidity.*

a. *Magnesia.* One or two tea-spoonsful to be taken occasionally, mixed in milk.

b. *Heart-ashes, salt of wormwood, fossil alkali.* Of either, ten or fifteen grains, dissolved in a glass of cold water, may be taken occasionally; either of these, or magnesia, are proper in all cases of sour stomach, attended with costiveness.

c. *Fine washed chalk,* or what is purchased under the name of prepared *crab's eyes*; from half a tea-spoonful to one or two tea-spoonsful, mixed in milk or water, to be taken occasionally.

d. *Lime-water.* This is made by pouring a small quantity of boiling water upon quick-lime, leaving it to slake; then adding more boiling water, to the quantity of two gallons of water to half a pound of lime; let it stand, now and then stirring it, until cold; then let it subside, pour off the clear water, and keep it in bottles, close stopped; a gill, with about half as much, or an equal quantity of new milk, may be taken once or twice a day. Either of these, but particularly the lime-water, will be found a useful corrector of acidity, in all cases of weak stomachs and bowels, attended with purging.

c. Take magnesia one drachm, powdered rhubarb ten grains, powdered gum arabic two drachms, common water half a gill; from a tea-spoonful to a dessert-spoonful, according to the child's age. This makes a useful medicine to correct green stools and griping in infants. After it has properly cleansed the bowels, half a tea-spoonful or a tea-spoonful of the anodyne mixture, (No. 14. b.) may be occasionally added; and in cases of lax, fine chalk or crab's eyes may be substituted for magnesia.

No. 16. *Bitters and strengthening Remedies.*

a. *Chamomile tea*, made strong and drunk cold, in the quantity of a tea-cupful, three or four times a day.

b. *Gentian and orange peel*, of each a quarter of an ounce, bruised, to be infused in a pint of cold water for twelve hours, then decanted or strained; when used in hot weather, add half a gill of brandy. A wine-glassful may be taken three times a day. Bitters are properly considered strengthening remedies; when not continued too long, they improve the appetite and strengthen the stomach and bowels; but a constant and long continued use of them is generally prejudicial.

c. *Peruvian bark* is one of the best strengthening remedies; it may be taken in powder, to the quantity of a tea-spoonful, three times a day. When taken to stop the return of intermittents, one ounce, at least, must be taken between the fits; when it purges, four or five drops of laudanum may be added to a few of the first doses; but whenever it is wished that it may prove purgative, add five grains of rhubarb to each dose; and in quartan or other obstinate intermittents, some aromatic, such as cloves or ginger, in the quantity of one sixth or one

eighth part, will increase its efficacy; new milk, a little spirits and water, or wine, particularly port wine, are its proper vehicles. When the doses are to be frequently repeated, as soon as one is taken, put another, with a small quantity of wine or water, into a glass, by which means it will become equally and universally moist, and may be mixed more easily and more smoothly. Children, and such persons as cannot be induced to take the bark in sufficient quantities to cure intermittents, may be relieved by administering it in the form of a clyster: in this way the dose should equal, at least, four common doses; it must be mixed very smoothly with a small quantity of new milk, and a proper quantity of laudanum; for a grown person, from twenty to thirty drops may be added to each portion, to occasion it to be retained; a second portion must not be administered until the prior dose has come away, unless that be retained above four or six hours, and then the laudanum should be omitted until after the bowels are again cleared of the bark.

d. *Columba*. Of this root, twenty grains, in fine powder, may be taken two or three times a day, mixed in water; or boil one quarter of an ounce, bruised, in little more than half a pint of water, for six or eight minutes, so as to strain off half a pint; of this decoction, two table-spoonsful are to be taken three or four times a day: this bitter is supposed to be peculiarly serviceable in cases of weak stomachs and bowels, attended with lax, and abounding in bilious crudities.

e. *Iron filings*, if made with a fine file, will require no other preparation; the dose is five or six grains, or about as much as a common pinch of snuff, with an equal quantity of powdered ginger, to be mixed in syrup or molasses, and taken two or three times in a day. In this simple form, iron acts as well as in any more laborious preparation. It is a most useful tonic

in all pale and relaxed habits, subject to watery swellings ; particularly for children of this description, with pale faces and distended bellies, whose complaints are frequently accompanied by worms. The dose for young or old (provided the filings are made with a fine file) may be much the same, as no more acts than what is dissolved.

f. *Vitriolic acid*. Add one part of common oil of vitriol, as it is bought from the shops, to six times the quantity of water, by weight ; from ten to twenty or thirty drops may be taken at a dose, in a glass of cold water, sweetened agreeably ; or it may be added to any bitter or astringent infusion, (No. 16. No. 3.) When it is desired to give a large dose, as is sometimes recommended, in hæmorrhage, combined with astringents, mixing it first with a large quantity of sugar, so far softens or neutralizes the taste, as to enable the patient to swallow it more readily : in a small quantity it very speedily quickens the appetite.

No. 17. *Cordials*.

a. Glass of wine, or a little brandy toddy.

b. *Essence of pepper-mint*. From four or five to eight or ten drops, dropped on sugar, and mixed with water.

c. *Compound spirits of lavender*. A tea-spoonful on a lump of sugar, is to be suffered to dissolve in the mouth, and gradually swallowed.

d. Two or three drops of the *oil of cinnamon*, on powdered sugar, and so swallowed, washing it down with a little wine and water, is a most powerful cordial in cases of great languor, and faintness from loss of blood.

LOCAL APPLICATIONS.

No. 18. *Cerates and Poullices.*

a. *Simple cerate.* Take yellow wax two parts, fresh olive oil five parts ; or take yellow wax two parts, fresh hog's lard eight parts ; melt them slowly together. Some variety must be made in these proportions, as they are to be used in summer or winter.

b. *Saturnine cerate : lead ointment.* Take simple cerate eight parts, white lead one part, rub them together until they shall be intimately mixed, and become perfectly smooth.

d. *Cerate with galls.* Take galls, finely powdered, one quarter of an ounce, camphor thirty grains, fresh hog's lard one ounce ; first mix the camphor, finely powdered, intimately with the lard ; then add the powdered galls. This ointment is very useful in piles, especially after the inflammation has somewhat abated.

f. *White mercurial ointment.* Mix one part of the white precipitate of mercury with eight parts of hog's lard. This is a very valuable ointment for an obstinate itching eruption, to which many persons are subject, about the groin and neighbouring parts. Even when it does not cure the disease, which it sometimes, as well as all other remedies, fails to do, its use, joined with frequent washing with cold water, will keep the patient much at ease. A very small quantity is to be rubbed on the part affected, after washing at night, until the itching subsides ; the ointment should then be omitted, until the complaint, being renewed, demands it to be repeated.

g. *Bread and milk poultice.* Boil the crumb of stale wheat bread in new milk, for a short time ; then take it from the fire, and beat it fine ; after which, boil it again until it is perfectly smooth and of a proper consistence, taking care that it does not burn. It

is of more consequence than is commonly imagined, that a poultice should be thus carefully made, so that it may lay perfectly smooth on an inflamed part; it should never be applied so hot as to give any pain.

No. 19. *Warm and discutient Liniments.*

a. *Volatile liniment* is made by mixing one part of strong spirits of hartshorn, with two or three parts of good sweet oil, good hog's lard, or fresh butter from the churn; they should unite into a uniform, white, soapy mixture; and if they do not, it is owing to the spirits of hartshorn not being sufficiently caustic. When lard or butter are made use of, they should be first melted; they may then, like the oil, be mixed with the spirit of hartshorn, by shaking them together in a vial.

b. *Camphor*, dissolved in oil or strong spirits, in the proportion of one ounce to a pint; they will unite, by first warming the oil or spirits in a vial, then adding the camphor, and shaking them well together.

c. *Opodeldoc*. Take of the best hard soap two ounces, camphor one ounce, very strong spirits one pint; mix the soap with the spirits, and let them stand in a moderate heat until the soap is dissolved, occasionally shaking the vial; then add the camphor, and continue to shake the vessel frequently, until the whole is dissolved.

These are very useful in sprains, bruises, and rheumatic affections, and wherever the object is to disperse swellings, tumours, and internal inflammations. The last answers all the purposes of Steers's opodeldoc.

d. *Mindererus's spirit*, (No. 12. a.) applied milk-warm, by means of a soft flannel, very powerfully tends to discuss an incipient tumour or other inflammatory swellings.

g. *Warm plaster.* Take of the gum plaster and Burgundy each one ounce; of blistering plaster one quarter of an ounce; melt them and mix them together. This is a most useful application wherever it is required to keep up a constant perspiration, and gentle irritation of the skin, over any particular part affected with rheumatism or any internal pain, unattended with external inflammation.

h. *Æther.* The method of applying æther, is to pour about a tea-spoonful into the hollow of the hand, and immediately apply it over the part affected, keeping the hand on the part until the æther be evaporated, or as long as the patient can bear the heat it excites. No remedy so suddenly and effectually removes cramps and all spasmodic pains.

No. 20. *Astringent and Antiseptic Lotions and Injections.*

a. Vinegar or spirits, with water or chamomile tea, in the proportion of one eighth or one sixth; an infusion of red rose leaves or green tea.

b. Take oak bark one ounce, or galls half an ounce; boil either in three half pints of water, until one third is evaporated; one sixth or one eighth of vinegar or spirits may be added to these when cold.

c. *Alum*: one quarter of an ounce dissolved in a pint of water by boiling them together.

d. *Sugar of lead.* Dissolve thirty grains in half a pint of rain water.

e. *White vitriol.* Dissolve sixteen grains of white vitriol in half a pint of rain or brook water.

f. *Borax.* Mix one part of fine powdered borax with two parts of powdered loaf sugar.

g. *Common yeast.*

FINIS.

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ERRATA.

Page 17, line 31, ~~for in by~~, read *by on*.

Page 39, line 21, after *from whence*, read *so much*.

Page 44, line 28, for *proceed*, read *precede*.

Page 234, line 34, for *nursing*, read *rousing*.

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